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75th Anniversary



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STEVENS

75th Anniversary



THE GREEN GATE

STEVENS

75th Anniversary

COMMEMORATING
SEVENTY-FIVE YEARS
OF ACCOMPLISHMENT IN
ENGINEERING EDUCATION

PUBLISHED BY
THE ALUMNI ASSOCIATION OF
THE STEVENS INSTITUTE OF TECHNOLOGY
CASTLE POINT, HOBOKEN, NEW JERSEY

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*To the men of Stevens
serving their country*

Many friends of Stevens have assisted in the making of this book. The Committee is particularly grateful to those who furnished the original material used in the preparation of the final manuscript. Acknowledgment of their contributions is made to:

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A SHORT HISTORY
OF STEVENS INSTITUTE
OF TECHNOLOGY



LOWER NEW YORK
FROM THE CASTLE

HISTORY

ANY COLLEGE, like any nation, institution, or family, is simply the sum of the people whose lives have gone into it. Let us see what has gone into the building of Stevens.

The history of Stevens Institute dates back far beyond its actual founding in 1870. To give any true idea of what the College is, of what it has meant in American engineering, we must start with three of the most interesting Americans who ever lived — Colonel John Stevens and the sons who followed his pioneering lead in inventive engineering. The Stevens family gave the college their name; its home was their home.

It was founded upon their land.

Robert Juet, mate of Henry Hudson's ship, the *Half Moon*, writing in 1609 while the ship lay at anchor in a cove opposite Manhattan Island, described in the ship's log a near-by "cliffe that looked the color of white greene, as though it were either copper or silver myne." This

cliff of green serpentine rock is the river face of an impressive promontory, once an island, on which now lies the campus of Stevens Institute.

The land described by the mate of the *Half Moon* passed in time, by Indian, Dutch, and English deeds, to the ownership of William Bayard, who had his residence at Castle Point at the time of the American Revolution. Bayard was a Tory. His properties were confiscated by the American government and sold at public auction to Colonel John Stevens, one time Treasurer of the Province of New Jersey, for a sum of \$90,000. Throughout the nineteenth century this was the home of the Stevens family, and the wooded slopes of the hill, particularly the northern section known as the Elysian Fields, attracted holiday crowds from the city across the river, the city which was slowly and noisily reaching farther into the sky than man had ever reached, the city which in itself was to become one of the greatest

engineering marvels of all time.

The college, placed originally, in 1870, on a city block on the southern edge of the Stevens estate, has gradually extended its campus to include all the Castle Point

area — some thirty acres — adding, as the college grew, new room for laboratories, athletic fields, student dormitories, and faculty residences. Such is the college today.

ON CASTLE POINT



In its seventy-five years of growth Stevens has had only three presidents, whose periods of influence have determined its history. Similarly, it has had three spiritual ancestors. The first of these was Colonel John Stevens (1749-1838), the com-patriot of Washington during the New Jersey campaigns, the correspondent of Jefferson and Franklin, the rival and actual antecedent of Robert Fulton. "Including" John Stevens in a short paper such as this is so presumptuous as to be almost laughable. The life of Colonel John Stevens would spread the covers of many fascinating volumes. It was his petition that framed the patent law of 1790, upon which our American Patent System is founded. He pioneered in experiments with propulsion by steam — constructing a steamboat which he ran on the Hudson River in 1798, making an application of steam to the screw-propellor in 1804, designing a multi-tubular boiler which was patented in America in 1803 and in England in 1805, operating in 1811 our first steam ferry, publishing in 1812 (against the solid opposition of the canal-minded capitalists of the day) his courageous and prophetic brief for railroads as against canals, designing in 1813 the first ironclad of naval history, being granted in 1815 the first railroad charter ever to be granted in

America, in 1826 (at the age of seventy-six) designing and constructing the first locomotive in America to run under steam on a track. Charles King, President of Columbia College, writing of John Stevens in 1852, says: "Born to affluence, his whole life was devoted to experiments, at his own cost, for the common good. He was a thoroughly excited and an unwearied experimenter in the application of steam to locomotion on the water and subsequently on the land. The thinker was ahead of his age."

Possibly the greatest of John Stevens' gifts to posterity were his sons Robert and Edwin. Still a third son, John C. Stevens, was himself the first Commodore of the New York Yacht Club, and conductor of the expedition of the yacht *America* to England in 1851, where he and the *America* carried off the international yachting championship. His brother Edwin later served as the New York Yacht Club's third Commodore.

Of the two Stevens sons who were best known, Robert was the inventor, Edwin the business man who made things possible, who built foundations under so many of the Stevens dreams.

Robert Livingston Stevens (1787-1856) perfected many inventions for the public use and good. He inherited his fath-



THE STEVENS LOCOMOTIVE

er's interest in railroads and designed so many parts of our modern trains that it would take a book to list them; it was Robert Stevens who designed the hook-headed railroad spikes and the famous "Stevens rail" (the common T-rail) which every train in America runs on today. In 1830 the Stevens sons built the Camden and Amboy Railroad, the oldest branch of the present Pennsylvania Railroad System.

But it is Robert Stevens' work in marine engineering that will make him forever remembered. He it was who originated the form of ferry boats and ferry slips now

in general use, constructing the ferry slips with spring piling and fenders. He made the first practical application of the expansive action of steam to navigation; he doubled the speed of steamboats, by both improved waterline design and engine improvement. In 1826 he invented the split water wheel, and in 1831 the balance valve now used on the beam engine; also in 1831 he made the first marine tubular boiler. For 25 years after 1815 he was America's finest constructor of steam vessels. He developed hull lines until his yacht *Maria*, built in 1850, was the fastest

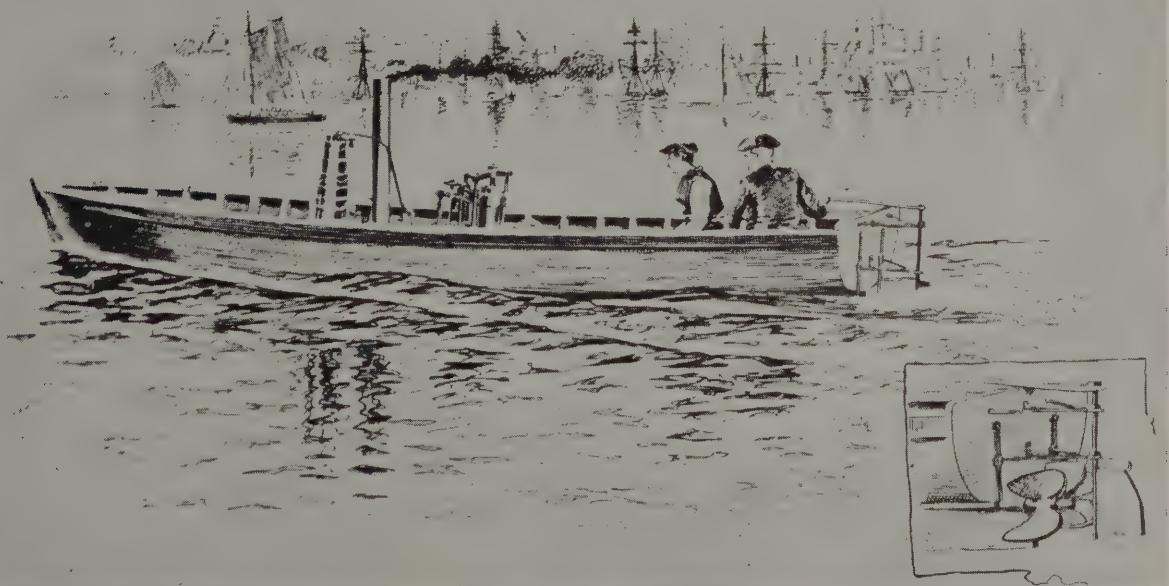
sailing vessel in the world. In his life-long work of reducing the resistance of water to moving boat hulls, Robert Stevens was possibly the father of all modern streamlining. Certainly he was the father of much of modern naval architecture.

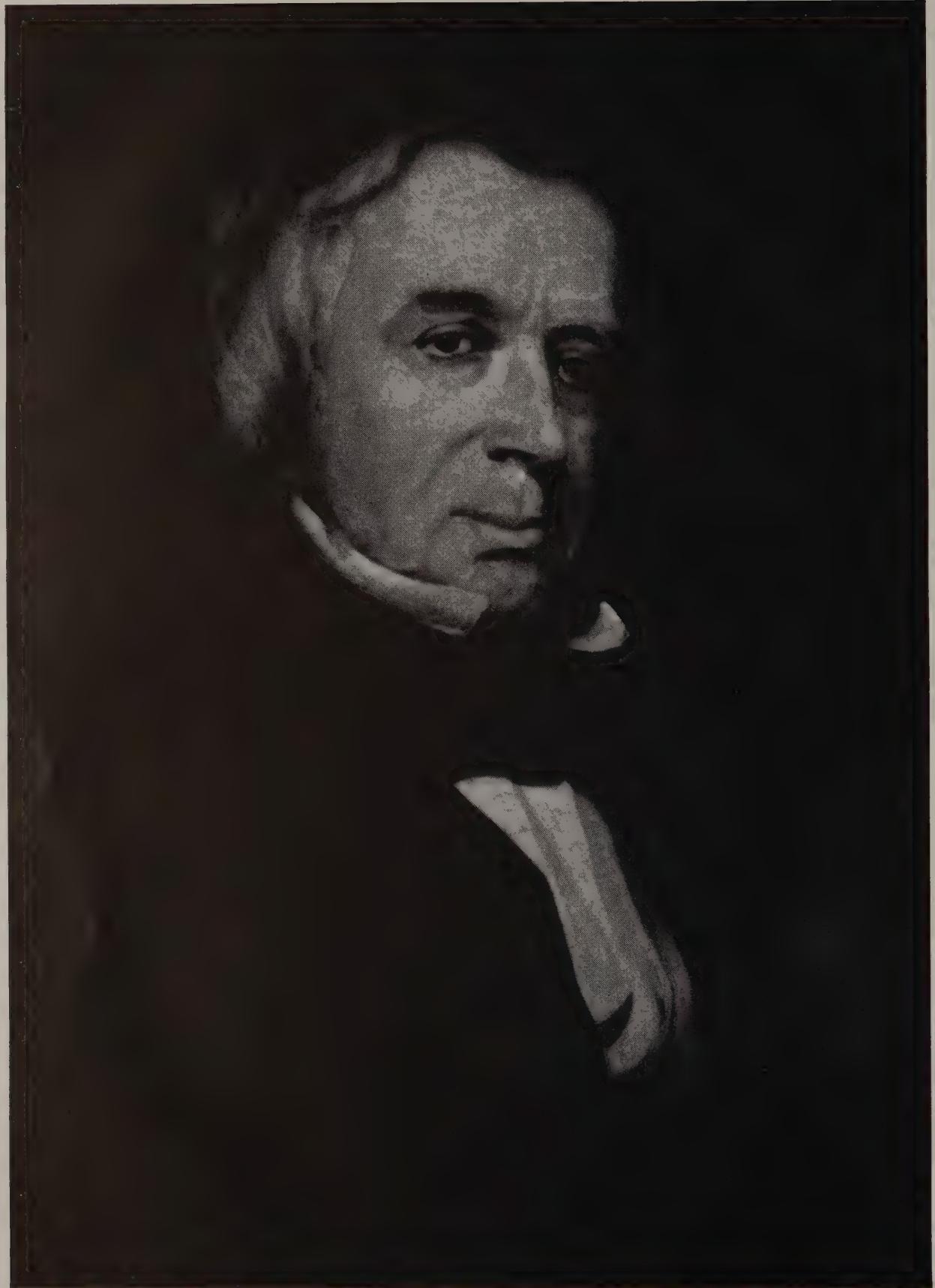
Though Robert Livingston Stevens took up his father's project of an ironclad ship, it was his brother Edwin Augustus Stevens (1795-1868) who did the earliest actual experimentation on iron plating to resist cannon shot. His conclusions as to the proper thickness of armor plate were adopted by Ericsson for his *Monitor* twenty years later. In 1856 the *Stevens Bat-*

ery, the first ironclad, was contracted for. Admiral Melville said that only naval conservatism kept this vessel from being ready before the War Between the States. In 1862 Edwin Stevens built and donated to the government the *USS Naugatuck*, used in the Peninsular Campaign.

But though he had engineering ability, it fell to Edwin's lot to manage the family properties. He rapidly became the man of affairs of the Stevens family. At the age of 25, by family agreement, Edwin was made trustee of his father's estate, including that part of the Stevens land on which now stands the city of Hoboken,

THE LITTLE JULIANA





EDWIN AUGUSTUS STEVENS, FOUNDER

New Jersey. In 1825, at the age of thirty, he became manager of the famed Union Line, the combination of steamboats and horse coaches which at that time carried nearly all the passengers and freight between New York and Philadelphia.

In 1830 a charter was granted for the Camden and Amboy Railroad, one of the earliest recorded railroads to operate in America, and the first unit of what is now the Pennsylvania Railroad. Robert was made President and Engineer, and Edwin, Treasurer and Manager; it was the fruition of their father's dream. Edwin, after supervising the building of the line and solving the countless legal problems involved in the new and strange industry of railroading, continued to manage the Camden and Amboy for the next 35 years. It was during this time that our American railroad system was forged.

Edwin Stevens' management of the Camden and Amboy Railroad was wise and lucrative. At his death in 1868 he left suitable land of the Stevens estate and \$650,000 to perpetuate the Stevens tradition in American engineering by the founding of Stevens Institute of Technology, the first college of mechanical engineering in the United States.

It is said to have been the hope of Colonel John Stevens that some part of his

estate might be used to found an academy. He also proposed that the State "erect a suitable university, where professors in every art and science are to be employed to give a finished education." Neither the public project nor the private hope were realized in his lifetime. It remained for his son Edwin to leave to his trustees a special educational grant consisting of a block of land in Hoboken, \$150,000 in stocks as a building fund, and \$500,000 as endowment. Edwin Stevens directed his trustees to erect within two years after his death "of some substantial but economical material, as substantial and economical as trap rock, a plain building or buildings suitable for the uses of an institution of learning . . . to establish there the officers, and tutors and servants thereof . . . for the benefit, tuition and advancement in learning of the youth residing from time to time hereafter within the state of New Jersey." He named as his trustees Martha Bayard Stevens, his wife; Samuel Bayard Dod, her brother; and William W. Shippen, an associate in business.

By act of the legislature of New Jersey, approved February 15, 1870, these three trustees were "constituted a body politic and corporate by the name of The Trustees of the Stevens Institute of Technology," and the corporation was empowered



IN THE 80'S

to confer "the usual degrees appropriate to a school of technology."

No phase of Mr. Stevens' will, however, prescribed the character of the instruction to be given. The responsibility for defining the institution devolved chiefly upon Samuel Bayard Dod. President Humphreys, second President of Stevens, writes of this: "After full consideration and against the advice of many educators and practical men, it was decided to organize a school of Mechanical Engineering, a line in which Edwin A. Stevens, his father, and his brother, had so efficiently labored. There had already been established schools of engineering differentiated in favor of the Civil or the Mining branches of engineering, but so far it had been contended that Mechanical Engineering should be taught only in the shops. This seems today to be remarkable when we reflect that all successful engineering is based upon the same fundamentals of mathematics and natural science combined with practice in the field, the mine, the factory, and in business."

The guiding spirit of the first trustees was Samuel Bayard Dod, whose interest in Stevens was so great that he devoted the major part of his life to it. Prepared for theology by studies at Princeton, followed by a year's study in Germany, he left the

Presbyterian ministry after seven years of service, faced with the overwhelming necessity of managing the Stevens estate. To prepare himself for trusteeship of the new college he secured information on the technical schools at Berlin, Zurich, and Mannheim, and then visited the mining and civil engineering schools then existing in America. It was after such extensive study that it was decided that Stevens Institute should establish a curriculum of Mechanical Engineering. The contribution of Samuel Bayard Dod to Stevens cannot be over-emphasized.

(The "Bayard" in the names of Edwin Stevens' wife and brother-in-law will perhaps be noted. Their mother was Caroline Bayard, indeed a branch of the family of William Bayard, the pro-British Tory from whom the Stevens land was originally confiscated by the new American Government. Thus the strange hand of history made it possible for William Bayard to make his own contribution to Stevens Institute.)

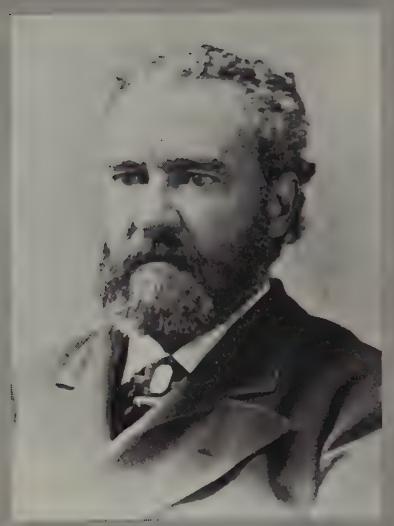
While their plans for the college were forming, the Trustees called to their assistance, as the first President of Stevens, Dr. Henry Morton, professor of chemistry at the University of Pennsylvania and Secretary of the Franklin Institute. He in turn appointed seven others to serve with him as the faculty: Robert Henry Thurston, Pro-



HENRY MORTON



ROBERT H. THURSTON



ALFRED M. MAYER

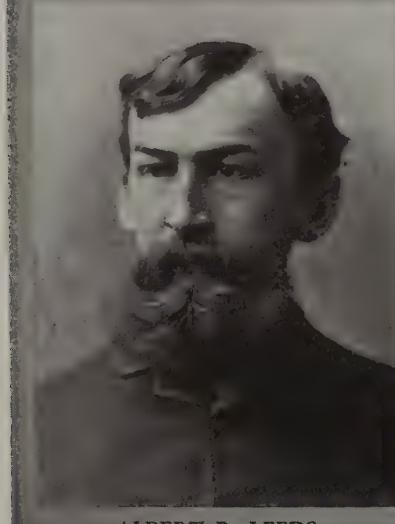


CHARLES F. KROEH

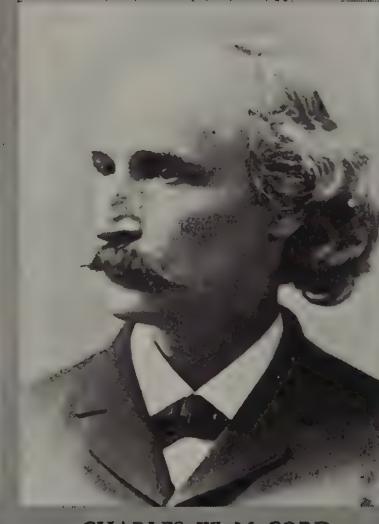
THE
ORIGINAL
FACULTY



EDWARD WALL



ALBERT R. LEEDS



CHARLES W. McCORD



DE VOLSON WOOD

fessor of Mechanical Engineering; Alfred M. Mayer, Professor of Physics; Albert R. Leeds, Professor of Chemistry; Charles William McCord, Professor of Mechanical Drawing; DeVolson Wood, Professor of Mathematics; Edward Wall, Professor of Belles Lettres; Charles Frederick Kroeh, Professor of Languages. These men were the first professors of the college. Alumni who remember them think of them as bearded and dim-eyed old men, but at the time of their appointment to organize the college they were energetic, vital young men in their thirties and early forties. With them was appointed an instructor in Mathematics and Natural Sciences in the preparatory department, William E. Geyer, later Professor of Physics. To these men and to their successors composing the Stevens faculty, men of high mental capacity and commanding personalities, goes a great measure of credit for the accomplishments of Stevens men.

On the third Wednesday of September, 1871, the new college was opened to students. The student body consisted of two Juniors, three Sophomores and sixteen Freshmen.

From the start there was but one regular course of study, leading to the degree of Mechanical Engineer. It was determined, said the first catalog or Announcement,

"to create a school of mechanical engineering . . . to involve a general and not a merely industrial training." The intention of the college was:

"1st. To afford a thorough training in the elementary and advanced branches of mathematics.

"2nd. To give a thoroughly practical course of instruction in physics.

"3rd. The subject of mechanical engineering, in reference to the theory and practice of construction of machines, will form . . . a distinct department.

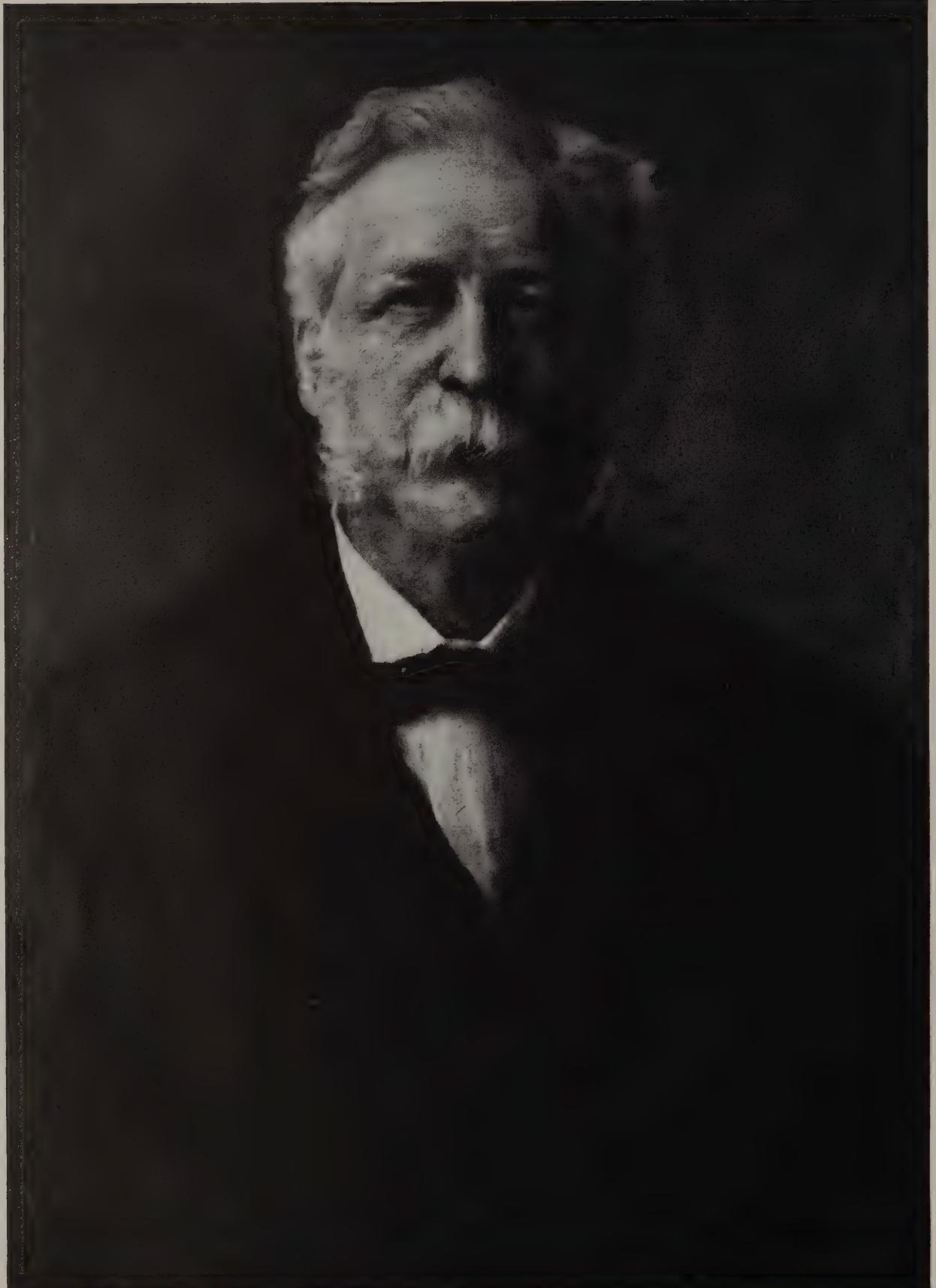
"4th. The subject of mechanical drawing . . . will likewise form a separate department.

"5th. The subjects of chemistry and metallurgy will likewise be thoroughly taught. . . .

"6th. The French and German languages will be an essential part of the course. . . .

"7th. A department of belles-lettres . . . will furnish the means of acquiring that cultivation of literary taste and the facility of graceful use of language, both in speaking and writing, which is as desirable in the engineer and man of science as in the classical student."

The concept of a general engineering education set by the original plan of Dr. Morton and his faculty has been preserved.



HENRY MORTON, 1ST PRESIDENT

There has never been in this college a multiplicity of curricula dividing the field of engineering into parts, in some one of which each undergraduate must specialize. On the contrary the college has had a single undergraduate curriculum, devoted primarily to mathematics, physics, and chemistry, and the various branches of mechanics, including thermodynamics, which are the foundation of all engineering. The definite inclusion of languages and belles-lettres anticipated by several decades the now common recommendation of engineering educators that studies in the field of humanities be generously provided.

In time additional departments and professorships were added to the first list: in 1883 a Department of Applied Electricity, in 1903 a Department of Business Engineering, which became the present Department of Economics of Engineering, establishing a precedent at that time for the inclusion in an engineering course of the critical themes of management, and in 1907 and 1908 respectively the instructions in structural engineering and in shop practice were reorganized under the two new departments.

The worth of Stevens Institute of Technology has always been its continuity of purpose. Unlike some institutions, which, in the manner of the streets of Boston,

are more the result of accident than plan, Stevens has evolved from a single controlling idea of practical engineering for the public good. The manner in which this idea has grown and expanded can best be visualized by recounting the contributions of its three presidents.

Three phases of its curriculum stand out: engineering under Dr. Henry Morton (1836-1902), who guided the college from its inception in 1870 until his death; engineering plus thorough business training under Dr. Alexander Crombie Humphreys (1851-1927), who served as president of Stevens from 1902 until two months before his own death in 1927; and engineering plus economics plus a new emphasis on the engineer's role in his own human world under Dr. Harvey Nathaniel Davis, the present president of Stevens.

Dr. Henry Morton, after a brilliant career which included both law and chemistry — as experimenter and lecturer at numerous institutions of learning — gave the better part of his life to insuring for Stevens a position as one of the world's worthy institutions of learning. He worked with the original trustees so well that in less than 18 months' time they had planned and erected the first Stevens building, chosen a faculty, and equipped the necessary departments. It was the vision

and genius of Dr. Morton to raise the Mechanic Arts in America to the plane of a learned profession. Far from a wealthy man, Dr. Morton gave to Stevens, in endowments and gifts of equipment, a sum fully equal to the total salaries he received as president. For thirty-two years he labored; at his death the college could already claim as its sons men who had made their mark in the engineering world.

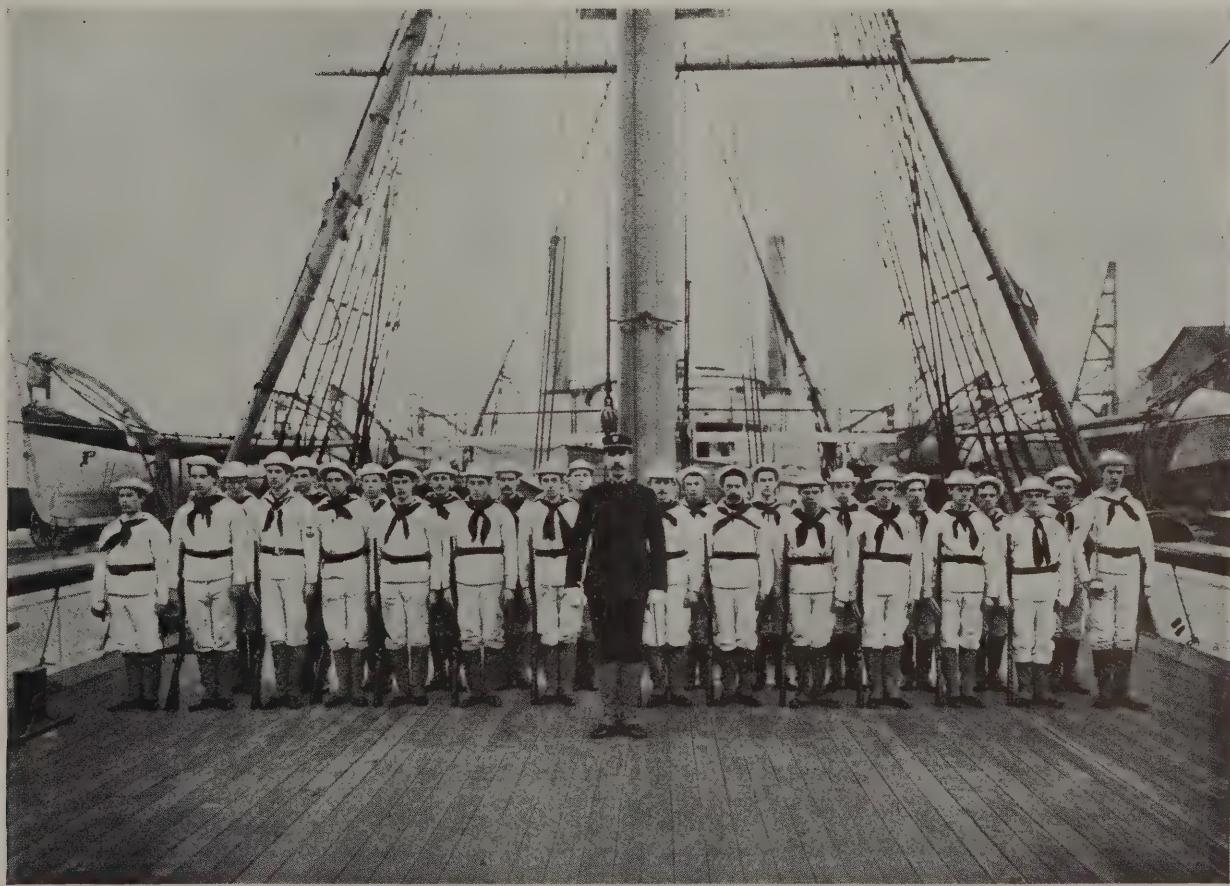
Twentieth-century warfare is dependent upon science, and a highly developed industry. In the long evolution which has made possible America's amazing production accomplishments of the second world war, Stevens men have been prominent. The marine water tube boiler, used in many of our naval and merchant vessels, is the result of the genius and enterprise of Hoxie ('89). Whigham ('88) and Cox ('87) were early in the field of armor plate, Leavitt ('75) improved the Whitehead torpedo, and produced the weapon of 1898 and 1917. Jacobus ('84) has a worldwide reputation in steam engineering. Taylor ('83) and Gantt ('84) were leaders in the study of efficiency in the production of steel and machinery. Kelly ('78) was one of the world's foremost engineers, and was identified with the development of electric machinery. Rice ('85) improved the Curtis turbine. There are other names

outstanding in many fields — steel and its alloys, electricity and its applications, steam engineering, the steam and electric locomotive, the marine oil burner, the pressure blower, the recording gauge, the automobile and airplane.

Many of the traditional Stevens institutions, such as the Alumni Association established in 1876, were started during the presidency of Dr. Morton. Worth particular mention is Stevens' close association with the Navy, to be expected of the followers of the Stevens family. Rear Admiral G. W. Melville, head of mechanical engineering during the early years of our new "steam" Navy, extended such interest to Stevens that he was given an honorary degree in 1896, as was Rear Admiral David W. Taylor in 1905. Stevens men were often called upon for consultation, and the Department of Tests at Stevens Institute was frequently used in the solving of naval problems. In 1882 C. A. Carr, later a Rear Admiral, came to Stevens from the Navy for a short time as a member of the faculty. Some of the first of the new steam-driven ships were equipped with young Hoxie's water tube boilers, and their success led to the use of this boiler as standard equipment. One such vessel was the cruiser *Marietta*, which made the same successful cruise around

Cape Horn in 1898 as did the famous *Oregon*. In 1890 the need of a Naval Reserve was recognized, and by 1896 Hart ('87), Anderson ('97), and thirty Stevens undergraduates formed the engineering division of the New Jersey Naval Reserve, whose home was the historic USS *Portsmouth*. When war came in 1898 the

service record of Stevens men both in combat duty with the fleet and the equally important service of shipbuilding and repair was imposing. It is no accident that today the three model-towing tanks at Stevens, famed for testing cup contenders, are now in use by the government, earning new prestige in naval architecture.



STEVENS MEN IN THE NAVAL RESERVE, 1898

Lieut. B. F. Hart, Jr. '87 Commanding; Lieut. (J.G.) E. W. Frazar '90; Machinist, 1st Class, H. W. Anderson '97; Water Tender, 1st Class, H. Brett '98; Machinists, 2nd Class, G. F. Kidd '98, E. E. Burnet '96; Firemen, F. W. Armitage '01, R. A. Benavides '00, E. T. Bradley '01, R. E. Bruckner '96, J. H. Drake ex '00, T. F. Dreyfus '98, J. Ferguson '00, L. W. Garrick ex '97, J. F. Hackstaff '98, W. Hussey '98, W. G. Lunger '98, W. H. Miller '98, A. C. Myers '98, R. T. Ode '98, H. J. Raphel '00, W. B. Rittenhouse '98, F. E. Scott '97, R. S. Scott '98, H. H. Shawson '98, A. I. Smith, Jr. '98, G. H. Stover ex '99, W. I. Thomson '97, H. L. Underhill '00, H. B. Upjohn '99, A. V. Wainwright '98, M. P. Walker '98, A. F. Westervelt '98, H. T. Woolson '97.



ALEXANDER CROMBIE HUMPHREYS, 2ND PRESIDENT

Upon the unique collegiate foundation begun by Dr. Morton, Dr. Alexander Crombie Humphreys, as second president, endeavored ceaselessly to develop in Stevens men the qualities most needed by the technical executive or the industrial administrator, of which he himself was an early and brilliant example. As one means to that end he originated and himself occupied the Professorial Chair of Economics of Engineering, to which Dr. Ennis has added distinction, and has now relinquished to become Professor Emeritus.

Of a distinguished Scotch family, Dr. Humphreys was brought to America by his parents at the age of eight. At the age of fifteen he passed the entrance examinations for the Naval Academy at Annapolis, but being a year below the minimum age entrance marked time, as he thought, by working for a banking concern and for the Bayonne, New Jersey, Gas Company. The latter position claimed his interest, and the firm kept him in its employ until he had the position of Secretary-Treasurer. Feeling the need of greater technical knowledge in the gas business, he attended the Stevens class of 1881 while continuing his duties as Secretary-Treasurer of the Bayonne Company in order to support his wife and two small children.

It was this early association of a gas-

company manager with Stevens Institute that led to the rapid development of the gas industry throughout the country, through the application of intensive technical and scientific knowledge. In 1885 Dr. Humphreys became General Superintendent of the United Gas Improvement Company and poured trained technical graduates into this first of the great holding companies.

In 1894 he left the U.G.I. Company and opened the American office of Humphreys and Glasgow, that company having been formed abroad two years earlier. He later served as president of various gas companies and engineering societies, in addition to his outstanding work as consulting engineer.

At the height of his success in business, he accepted the direction of Stevens Institute upon the death of Dr. Morton in 1902. His two sons had been tragically drowned in the River Nile. With his own boys gone he lived for other men's sons, embracing the college family as his own.

It was during Dr. Humphreys' presidency that the college expanded. Dr. Humphreys inspired gifts of three and a half million dollars for the school, with the promise of another million from the William Hall Walker estate, following life interests in the money. Dr. Humphreys him-

self, following the selfless lead of Dr. Morton, gave \$30,000 of his own limited funds to Stevens.

Particularly noticeable as improvement were the buildings that rapidly sprang up on the growing campus.

Through the first quarter century the main building, known to generations of Stevens men as the "Old Stone Mill," housed all the activities of the college. In 1902, just at the close of President Morton's administration, the Carnegie Laboratory of Engineering was completed, a gift from Andrew Carnegie, a trustee of the college. The Morton Memorial Laboratory of Chemistry was dedicated in 1906. In 1916 the William Hall Walker Gymnasium was completed. Recitation Hall, dating back to the preparatory school days of the '80's, was enlarged in 1908 and adapted to college use in 1917. In 1918 two government war emergency buildings were purchased and reconstructed, one to house the growing library, the other to contain the departments of Electrical and Civil Engineering. The Castle, the original home of the Stevens family, became a student dormitory.

Also during the presidency of Dr. Humphreys, athletic fields were added to the campus. Before the turn of the century a paid coach had been almost unknown to

Stevens teams. The team captain arranged the schedules, planned the strategy, and coached both individual and team. The players donned their uniforms at home and proceeded to the St. George's Cricket Club Grounds, loaded with gear, and after practice traversed their way back again.

In the first decade of the twentieth century national athletics began to flourish. Stevens had its fling at it. Paid coaches became the rule for baseball, football and lacrosse, and excellent teams were developed. In lacrosse Stevens for some reason always excelled, and still does. Football fared less well; the small enrollment and serious interests of the school simply did not jibe for long with the golden hurly-burly athletics at the large general-curriculum universities.

With the building of the Walker Gymnasium in 1916 the Department of Physical Education was founded under John A. Davis, who still heads the department. Physical training became a part of the regular Stevens curriculum. Athletic emphasis at Stevens changed to all-student sports; interest grew in swimming, wrestling, basketball, tennis. Lacrosse through the late teens and twenties continued to be the top-ranking sport, the 1917, 1919, and 1920 teams remaining undefeated. In 1926 the Stevens lacrossemen defeated the crack



LACROSSE

Oxford-Cambridge team from England. In late years Stevens, as becomes its particularized character, has increasingly stressed intramural games calling for the participation of all students, the aim being the building of individual and lasting health

rather than the garnering of spectacular headlines.

In Dr. Humphreys' time other student activities were also expanded. The present weekly student newspaper, the "Stute," was first issued in 1904. Four student



DR. HUMPHREYS AWARDING AN HONORARY DEGREE

boards assumed responsibilities for the major interests of student life. An Honor Board to administer a system of self government in examination was founded in 1908. The Student Council for general supervision of undergraduate activities appeared in 1912, followed by the Athletic Council and the Inter-fraternity Council.

But it was the quality and brilliance of the *men* that Stevens turned out under Dr. Humphreys which makes his fame most bright. There was scarcely any phase of American engineering or business life that Stevens men during the twenty-five years of Dr. Humphreys' sway did not enter and often dominate.

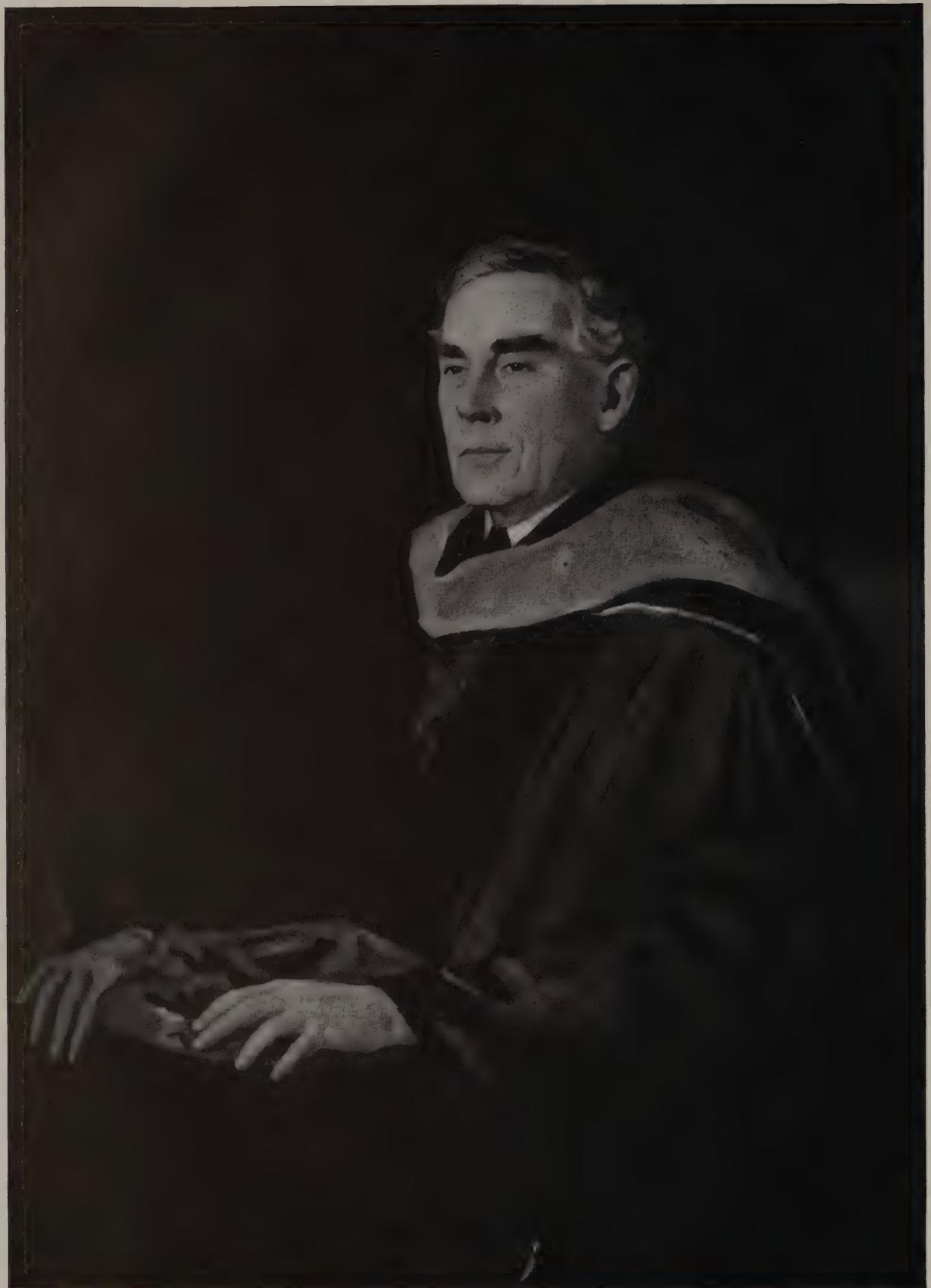
In seventy-five years, the college has given its undergraduate diploma to 4700 men whose subsequent careers have taken them into all fields of engineering practice. They have taken a leading part in creating and directing our industrial progress. Of well known alumni, one did pioneer work with Edison in the development of a complete system of incandescent lighting; another became chief mechanical engineer for the Pennsylvania Railroad System; another developed the first successful tuned radio frequency amplifier; another became Engineer of Construction of the New York Port Authority; another became one of the largest producers of typewriters; anoth-

er invented equipment for graphic continuous records of plant conditions; another was the first to introduce dynamos into Italy; still another took electricity to Japan; another has been one of the foremost gas plant engineers of Europe; another did pioneer work in establishing one of the largest

automobile companies; another revolutionized the smelting of copper; another headed an international mining and manufacturing company; another led in the study of electrolysis as it affects corrosion; and two others first developed high-speed tool steel. Hundreds of younger men are today ad-

WELDING CLASS





HARVEY NATHANIEL DAVIS, 3RD PRESIDENT

vancing to take similar places in American industry.

The third and present president of Stevens Institute is Dr. Harvey Nathaniel Davis, a noted scientist and a national and personal force in modern education. In his own person and in his work he embodies the union of science and culture which is the goal of civilized man. Before taking over the direction of Stevens, Dr. Davis had been Professor of Physics, later Professor of Mechanical Engineering, at Harvard University. His technical attainments are numerous: he served with the U. S. Bureau of Mines in research in helium during World War I; he has been a consulting engineer; done research work in thermodynamics, particularly steam tables; is credited with inventions improving steam tables and processes for the liquefaction and rectification of air; is the author of science text books. His honors are many; he holds membership in ten American and British scientific societies. Since 1938 he has acted as a Regent of the Smithsonian Institution at Washington; he has been a member of the Board of Visitors of the United States Naval Academy. He is a Past President of the ASME. In 1942 he was called to Washington to direct the Office of Production Research and Development of the War Production Board. In the au-

tumn of 1943 Dr. Davis went to England on a war mission for the OPRD and the Combined Production Resources Board, composed of representatives of Great Britain, Canada, and the United States. After his return he was notified that he had been elected an honorary member of the Institution of Mechanical Engineers in England. Dr. Davis is the fourth American thus honored, the others being Henry Ford, Orville Wright, and Professor A. G. Christie of Johns Hopkins.

It is natural that under such a man Stevens Institute of Technology should deepen and mature its curriculum. Two of the outstanding advances have been the graduate school and in research.

As the several fields of engineering and applied science have become more highly developed, they have become more highly specialized. No form of undergraduate curriculum can hope to provide adequate technical training for professional service in all these fields.

Therefore, in the Stevens plan of education, specialization beyond a limited range of technical elective courses is to be undertaken "on the job" and in post-graduate study. This has been Dr. Davis' belief.

Graduate courses leading to the degree of Master of Science were first given by the College in 1930. For eight years thereafter

they were given only during the day. In 1938 a more extended program of evening graduate courses was made available to graduate engineers employed in the metropolitan area. In the two terms of 1942-43, the Graduate School had an enrollment of 419 with a total of 899 course enrollments. Graduates of 93 colleges and universities were enrolled, 24% of the total number being graduates of Stevens.

Through the maintenance of research facilities and by encouraging professional consulting and research by members of the faculty, a college makes its contribution in the advancement of knowledge and invigorates its whole teaching program, both in

the college and on the graduate level.

One of the first research undertakings of the presidency of Dr. Davis brought about the appointment for three years of a research professor in mechanical engineering whose duty it was to define in engineering terms standards useful to manufacturers, and to arouse interest in abatement of the smoke nuisance in metropolitan areas; his work has been perpetuated by local industrial associations for smoke abatement and by county commissions appointed to apply new controlling ordinances.

Another recent research interest of the college has been in the development and application of psychological or aptitude

APTITUDE TESTING





THE ENGINEERING CAMP AT JOHNSONBURG

tests; a laboratory and testing center for this purpose was maintained at the college from 1929 to 1943. Over a period of years, the aptitude studies were financed in part by grants from the Research Corporation of New York. Branch laboratories have been opened from time to time at other schools and colleges and, each summer for 12 years, at the Stevens Engineering Camp as the central feature of a camp session for the educational and vocational guidance of boys of high school age.

Research projects arise from the consulting practice and the special interests of members of the faculty.

When unusual facilities are required and funds for the purposes are available, special laboratories have been equipped. The metals laboratory for which William H. Peirce ('84) provided funds in 1940, is used for instruction and for research on the properties of metals. A powder metallurgy laboratory installed in 1939 has as its sponsors eleven major industrial concerns

each of whom supports a research fellow working on fundamental problems of particular interest to the sponsor but of common interest to the entire group.

Two Stevens research departments, already well established at the outbreak of the war, have been greatly expanded for research on army and navy assignments; the Sound Research Laboratory, having originated in the Stevens Theater to which the Rockefeller Foundation made grants for experiments in the stage use of sound and light; and the Experimental Towing Tank Laboratory which now uses three tanks in its studies of problems of ship and airplane design, a 100-foot tank built in 1935, and two larger tanks constructed in 1942 and 1944 for government use.

The postwar educational research program for the Institute has been placed on a new basis by the establishment in 1943 of the Stevens Research Foundation. The Board of Trustees started the Foundation with a venture fund, not to be regarded as endowment, but as a fund to be spent, to be replenished by receipts for work done. The type of research to be attempted will differ from the sort of research done in the ordinary industrial laboratory because

of its long-range and impartial character.

In the philosophy represented by Dr. Davis at Stevens the college aims to do more than train expert engineers for making a livelihood; it should train them to accept and fulfill their life responsibilities. From the beginning of his administration Dr. Davis has stressed the human side of the engineer's preparation by including in the curriculum a wide range of elective courses in the humanities. He believes that as the technical practice of engineering half a century ago developed men who became the foremost production managers in the world, production management today requires industrial administrators, men with vision beyond the plant, men with a true understanding of what is going on in every corner of the world, and the ability to play their full part in the challenging era of war and reconstruction.

Thus, in the midst of world-wide strife, the College begins the fourth quarter of its first century. With the vision of its founders, the wisdom of its guiding spirits, and the loyalty of its alumni, Stevens Institute of Technology faces the future with confidence, in the pride of a great tradition.

STEVENS TODAY



COLOR GUARD

STEVENS TODAY

TO SAY that war is a difficult time for a college is so self-evident as to be almost unnecessary. War is a difficult time for humanity; the most difficult, the most costly, the most exhausting trial man must face.

The wastage of it is that all men must endure the wars of a few, that nations that want nothing but peace must forever clean up the messes of the childish, the criminal, and the insane. But thus it is. In the national agony of a nation's war effort, the trials and the contributions of any individual, of any group, or of any college, seem hardly worth mentioning.

But they are worth mentioning. Those who have not seen war, either on the land or on the sea, are far too prone to think of an army or a navy as so many million men, so many ships and planes, so many guns — so many *figures*. Wars are not fought with figures. An army of ten million men is simply a whole vast group of *you*, each with your own weariness, your

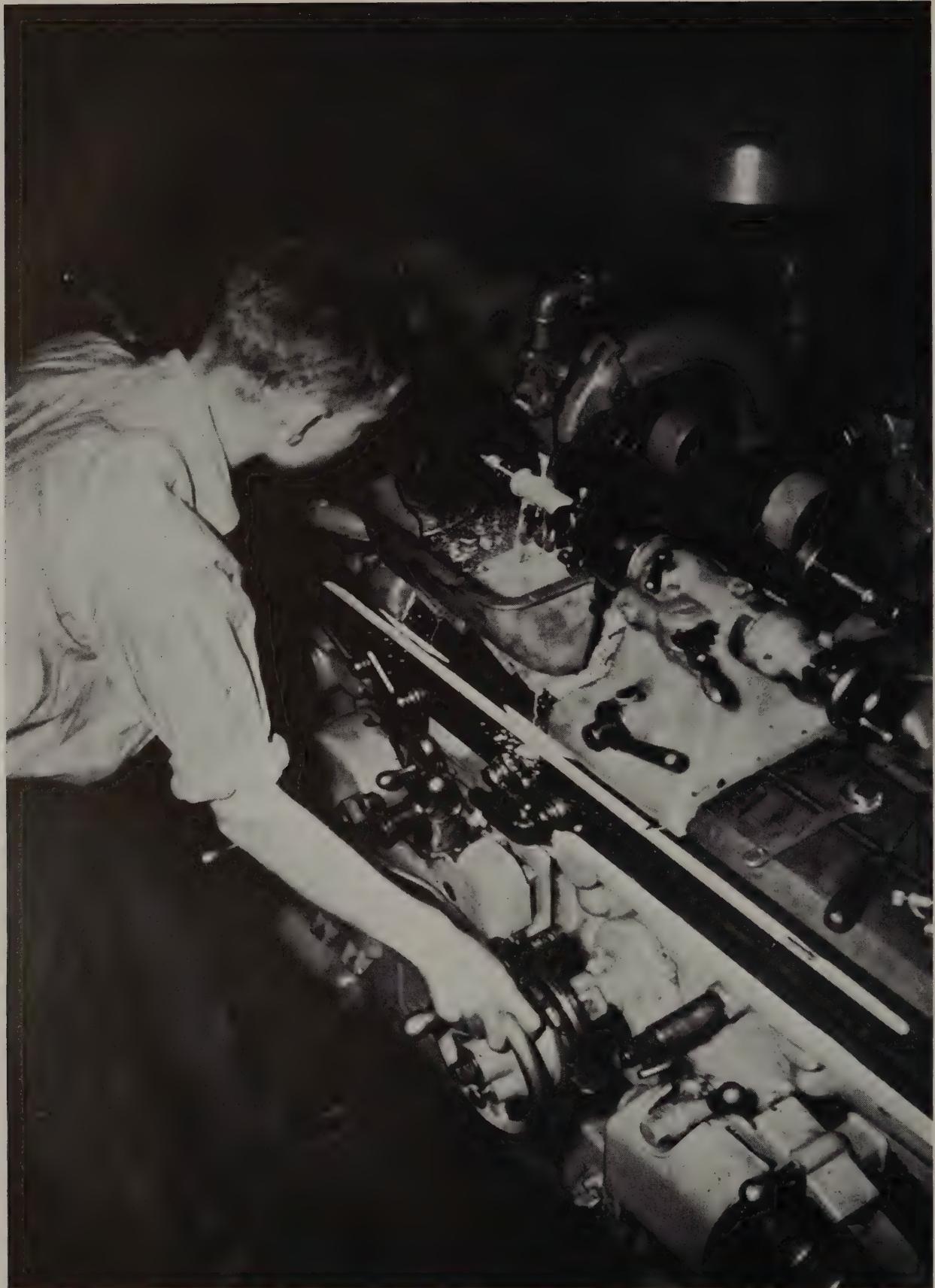
own rubbery fears, and your own unconquerable pride. Any army can win a war only if each man in it wins a war.

Each man in the nation must contribute a little, as much as he can, in the way he can.

Institutions of learning are no exception. War seems to negate everything the college has taught through all the years since the war that preceded it, even technical knowledge. If man's hard-won knowledge of the world's natural laws is to be used by him for his own ultimate destruction, then knowledge is farcical.

This we are not prepared to admit. This no college in the country will admit. This, indeed, no man who has ever read a book will admit. But it is an odd commentary that education must fight its own wars *during* wars. Education must fight for the existence of its country, and at the same time must fight with ceaseless vigor for the existence of education itself.

During the present war the colleges and



MACHINE SHOP

universities of America have contributed what they could, all they could. Stevens' contribution, while a personal and prideful achievement, is in no sense unique and is not here presented as such. In a world suddenly bereft of its senses, America's educational institutions all have seen that in order to continue at all on the path of increasing world knowledge they must first help to obliterate the beast standing astride that path.

What has Stevens done? What is Stevens doing, today? And what of Stevens tomorrow?

When war broke upon America on a Sunday morning, when people leaving our churches suddenly heard the roar of Jap bombers over Pearl Harbor and Manila, Stevens acted with speed and courage.

Dr. Davis saw that upon him, as head of America's oldest college of mechanical engineering, would fall certain responsibility. He saw also the problem that would inevitably arise and the danger of unbalance that would surely result. There would be the insistent clamor for troops, for more troops. Get all our young men into the Army, give them guns, and send them against the enemy.

All our young men? Dr. Davis thought not. This most modern of all wars would inevitably be a war of techniques, an engi-

neering war. Our trained and partly trained young technical men must somehow be saved from the holocaust, or we would inevitably end up, long before the end of the war itself, with a giant sprawling army going into battle with obsolete weapons, and no one in our laboratories. We would suddenly find ourselves attempting to fight a modern war with ten million men armed with broomsticks.

Dr. Davis, together with other American technical authorities, knew that this must not be allowed to happen. He began making speeches, almost to anyone who would listen. Our technical men, no matter what their years, must be kept *technical* men; they must be kept in our laboratories, our factories, our colleges. Help and uphold the men in charge of your local draft boards; help them explain to people what a technical war means, what a technical war *is*, why some young men must be kept in essential technical jobs while other young men must go to the front. In this war no American must die because the weapon in his hand is inferior to the weapon in the hand of his enemy.

It was an audacious campaign, if by no means a one-man one, and it began to bear results. At Cincinnati in the Spring of 1942, following his address before the American Society of Chemical Engineers,

the assembled association accepted Dr. Davis' program as the crystallization of its own deep-held convictions, and members returned to their various home cities with renewed determination to keep our trained technical men at work in our laboratories and our factories. Other societies of chemical, civil, and mechanical engineering took up the cry, and draft boards and influential men all over the country had many visits from men of fifty and sixty and seventy — men who described the essential war worth of certain young men of twenty.

Back at Stevens itself, the scene was hardly one of idleness. Clear back in the Spring of 1941 the Stevens campus had had a most unusual visit. Admiral Harry E. Yarnell had appeared one day accompanied by a small group of men in civilian clothes, men who were soon to go into uniform and take leading technical positions in our Navy's war effort. Briefly they explained to the Stevens student body and to the Stevens authorities what the Navy's needs would be if war came. They explained that the Navy would need hun-

ADMIRAL YARNELL GIVES THE 1941 COMMENCEMENT ADDRESS



dreds and thousands of technical men to make, maintain, and man the sensitive machinery of modern naval warfare. If war came, the Navy would *respect* technical training.

If war came . . . The following day Stevens bore a more thoughtful air. Here and there was heard the phrase that was to be heard so often in the future on the Stevens campus, "Sit tight or join the Navy."

For more than the next year, with Dr. Davis away the majority of his time in Washington and in Europe, the actual administration of Stevens had to be left largely in the hands of three men — Vice-President James Creese, Dean Frederic E. Camp, and Nichol H. Memory, Assistant to the President, and Director of Admissions. Too much credit cannot be given to these three men who did so much to guide Stevens safely through the early days of this war.

Under Dr. Davis' guidance, there came into being the "Accelerated Service Plan." Stevens adopted a twelve-month study schedule of three terms without summer vacation. Stevens students would henceforth spend two equal terms of the year in school, the third at work in a *technical* job in one of our nation's defense plants. The three terms — two at school, one at work

— would be so rotated that each war job thus filled would be permanently filled; as each young man holding it returned to Stevens for further study, a Stevens schoolmate would step in and take over.

Stevens' Accelerated Service Plan worked well. A small college with carefully limited enrollment, Stevens filled 171 technical war jobs in this manner, filled them with what the jobs demanded — *engineers* of at least some training. And Stevens itself was enabled to continue its complete training of engineers, both in theory and in practice. The jobs were themselves an important part of the course of study.

In addition, in December of 1940 Stevens established a special administrative and teaching unit, presently called the War Industries Training School, to conduct afternoon and evening classes under the Office of Education and give further aid in relieving the shortage of engineers in war industries. By February of 1945, 4122 men and women, not candidates for academic credit toward a degree, had passed through this special school into wartime industrial employment.

Very early in our war program, the Navy started its special educational programs known as V-1, V-5, and V-7, all designed to permit certain special-group students to

remain in college and finish their education, education that the Navy knew would be needed. These students of special skills were commissioned upon graduation.

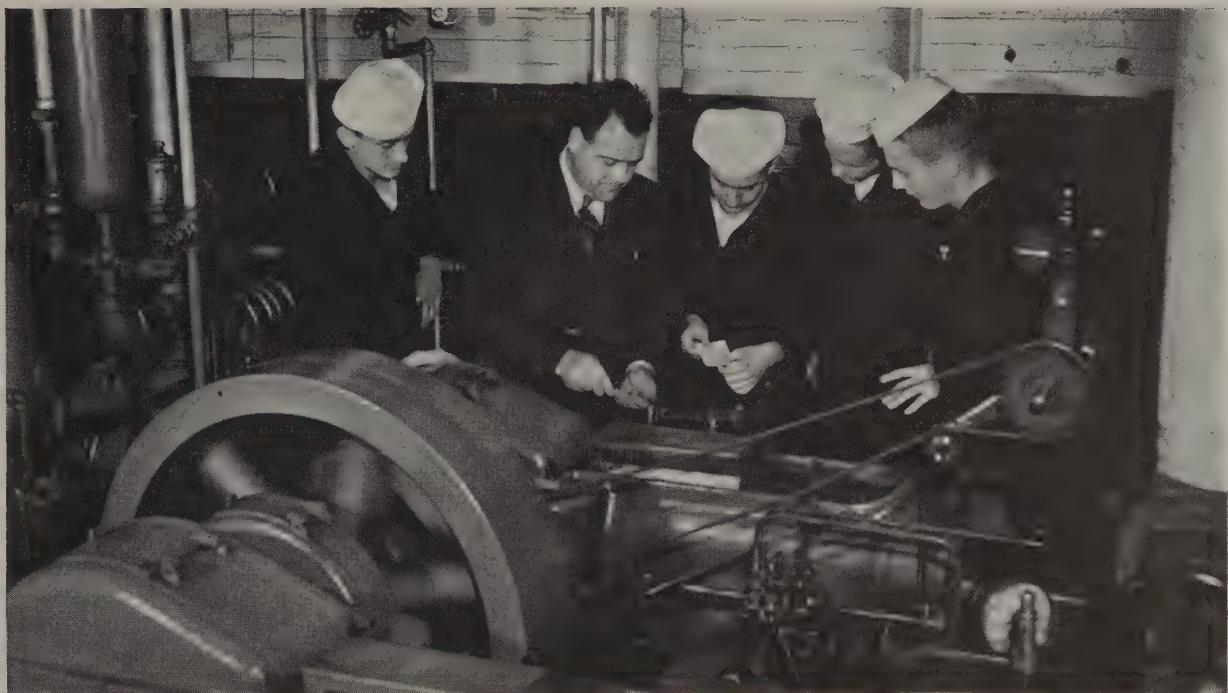
The Stevens Accelerated Service Plan came to an end in the Spring of 1943 by a change in our draft regulations. At the same time the armed services began their own educational programs — the Navy with its new all-encompassing V-12 program for engineering and other special skills, and the Army with the ASTP (Army

Specialized Training Program). The Navy was fortunate in that it was able to know exactly what type of trained men it would need, for how many new ships, and when.

On July 1, 1943, upon its own request, Stevens Institute was designated by the Navy as a V-12 training center. Stevens was given a quota of 505 V-12 trainees, to be trained and quartered on the Stevens campus at Navy expense. Actually there were 513 students in the first V-12 enrollment. This was the eighth largest V-12

V-12 COMES TO THE CAMPUS





They Wore the Uniforms of Navy Enlisted Men

engineering unit in the country. Of this number of special students on the campus, 217 were already Stevens students under the Navy's V-1, V-5, and V-7 programs. These students simply transferred to the new V-12 classification and were allowed to finish their regular Stevens curriculum, except that now they wore the uniforms of Navy enlisted men and were paid and housed by the government. The other 296 students of the original V-12 enrollment (including many young men already "admitted" as Stevens freshmen) started immediately on the Navy's special engineering curriculum with like status and pay. Of these new students on the Stevens campus, the majority were recent high

school graduates from various parts of the country, selected by the Navy through examination and interview; a few young men, likewise selected, came directly from action in the Fleet. All V-12 students were on active duty. Upon successful completion of the V-12 curriculum and after post-graduate studies at midshipman training centers, the V-12 students were given commissions in the United States Naval Reserve.

The V-12 engineering curriculum consisted of eight terms. It was a "speed-up" course necessitated by the needs of war; it gave the student a four-year course in two and two-thirds years (eight terms, with three terms per year.) The Navy's V-12 specialized engineering curriculum was



MR. CREESE, LIEUT. BOYLES, DR. DAVIS

thorough and well adapted to its military purpose. To the men completing this specialized Navy course Stevens offered the Bachelor of Science degree. At the same time, Stevens made it possible for any V-12 students desiring the M.E. degree to gain it by taking certain necessary additional courses after the war.

The Stevens V-12 unit has been commanded from its inception by Lt. Robert E. Boyles, USNR. Lt. Boyles, formerly Principal of the Washington High School at Washington, Pa., has earned a "Well done!" from both the Navy and Stevens in a difficult and heavy assignment. During this time Lt. Boyles has had three successive Executive Officers — Lt. Dewey B.

Stuit, USNR, Lt. Seymour Beardsley, USNR, and the present "Exec," Lt. Philip Kelly, USNR. Lt. Stuit, during the difficult early days of getting the unit under way, made particularly noteworthy contributions to the success of the project. The physical-training side of things has for the entire time been in the large and capable hands of Lt. (jg) William Frederick Bailey, USNR, former All-American from Duke University.

The Navy's V-12 program is by now tapering off in numbers. The Stevens unit, in line with the national curtailing of the program, was notified that on November 1st, 1944, the unit would be reduced to 309, and on March 1st, 1945, still further

reduced to 256. After 1944, all V-12 students would come from the Fleet, with no more being selected directly from high schools. The Navy has announced that it will shortly shift its training emphasis to its NROTC (Naval Reserve Officers' Training Corps).

The V-12 unit, large as it has been, has by no means completely engulfed student life at Stevens during the present busy years. From 225 to 290 civilian students have been on campus during each term of this time — the great majority youths

under 18 attempting to get as much of their planned education as possible before going off to war. There have also been a few young men physically ineligible for military service, together with a sprinkling of returned veterans. The Stevens men in the V-12 unit itself have done much to provide leadership for the entire student body.

Today, as through all the days of the last seventy-five years, Stevens is extremely busy in all of its many divisions, divisions each worthy of a separate volume. The

ACROSS THE POINT



Department of Sound Research is at present conducting investigations of a secret nature for the armed forces. The Department, now under the direction of William Wolff, was originally directed by Professor Harold Burris-Meyer, now a Lieutenant Commander in the Navy. Professor Burris-Meyer's survey of the use of music as a means of increasing industrial production recently won his Department national attention when his findings were published. The work of this Department in solving the sound problems of our na-

tion's theaters is well-known. Experiments begun in the Stevens auditorium were continued by Professor Burris-Meyer and his staff at New York's Metropolitan Opera House and Carnegie Hall, and at various theaters in New York and elsewhere. As soon as war needs slacken, studies of peace-time sound problems will be resumed.

The three tanks of the Experimental Towing Tank Laboratory are busy day and night testing proposed ship and seaplane designs for the Navy and for many private firms. Many of the tests are naturally of a

TOWING TANK, NUMBER 1



most secret nature, and the "No Visitors" sign is usually up. Under Professor Kenneth Davidson and his assistants, the Laboratory has been an important force in ship and seaplane design since the building of the first tank in 1936. Professor Davidson is a consultant at the Navy's own Taylor Model Basin and a member of sub-committees of the National Defense Research Committee and the National Advisory Committee for Aeronautics.

Although the oldest college of mechanical engineering in the United States, Stevens has refused to be bound by tradition. Enriched by a long and honored past, Stevens has always been ready to face tomorrow with courage and eagerness. The guiding doctrine has been that engineering knowledge should be used to solve today's problems and to make better tomorrows. Thus has come into being the anomaly that America's oldest college of mechanical engineering is in reality one of America's youngest of colleges. It was Stevens that started, a few years ago, a searching inquiry into man's own being with its Human Engineering Laboratory, an analytical effort to eliminate many of man's hurdles by helping him sooner and more surely to discover his capabilities and proper environment.

Past and present teach one another on

the Stevens campus. Bluejackets in officer-training to man our newest and mightiest ships run carelessly up and down the steps of Castle Stevens where was planned that first "ironclad" dreamed of by Colonel John Stevens and built by his sons. In the Lieb Collection of the library they may see Leonardo da Vinci's sketches for a flying machine, contrasting that powerless contraption with the giant seaplanes tested in miniature in the Stevens Towing Tank today. The Stevens auditorium is the daily scene of our most forward-looking experiments in the control of sound, and yet it is to be remarked that in this auditorium the American Society of Mechanical Engineers was founded. It is enriching ground for young men to tread.

Stevens has recently instituted another advance in educational opportunity. The Stevens Tuition and Scholarship Plan, Inc., was organized in 1940, as a non-profit New Jersey corporation. Under the plan any parent can insure a boy's education at Stevens by a series of modest monthly payments over a period of years. Higher education need not be the prerogative of higher income, but of careful planning.

Constructive engineering is now at ebb tide over the entire civilized world. When this most destructive of all wars ends, as end it will, the world's industrial plant and

half the physical world itself will have to be rebuilt — rebuilt by engineers.

Stevens will train its share of them. Stevens will always be a small college, doing a quality job. Stevens will continue to give young men of promise a foundation course in basic engineering.

With the cessation of the war, Stevens will go ahead with certain planned new construction on its own campus. Early in 1937, Stevens began work on a comprehensive plan of campus development. Jacobus and Palmer Halls, both dormitories, were completed before the war. As

soon as practicable, construction will start on a new field house. Next may come a new physics laboratory, or a new and larger power plant.

Stevens will have many new things as time goes on. But nothing will ever, in such history as Stevens may have, be built for the purpose of gloss. When Edwin A. Stevens left the original money which established Stevens Institute of Technology, he directed that it be built "of some substantial but economical material, as substantial and economical as trap rock . . . "

Stevens will always be built that way.

PALMER HALL



CREDAMUS



DR. DAVIS

CREDAMUS

As we approach the middle of this twentieth century, we have continually more and more reason to admire the wisdom of those who charted the course of this College seventy-five years ago. They boldly saw in what they then called Mechanical Engineering the broadest possible field of usefulness in technical education. In those days Civil Engineering was the only special branch of non-military engineering that had crystallized, and Mechanical Engineering meant to them everything else. So they chose it, and inaugurated an unspecialized course of basic engineering training from which men have since graduated into the practice of every now known branch of engineering specialization.

In these seventy-five years, both the range of responsibilities and the public acclaim of technically trained men have steadily enlarged for at least two quite different kinds of reasons. In the first place civilized living has become more and more dependent upon its technical foundations,

a fact which the great war, now happily ending, has strikingly impressed on everyone. And in the second place, there has lately set in a strong trend to bring into the management of industry the kind of thinking characteristic of the engineer. Indeed modern management can almost be thought of as a branch of engineering.

Hence we find the ideals and objectives formulated seventy-five years ago peculiarly appropriate to the conditions of 1945. No type of higher education is more vital, or more desired, today, than is basic engineering education, nor is any type better fitted to make appropriately selected students into able industrial leaders, into wise, responsible citizens, and even into men of broad culture, well fitted to understand, appreciate, and contribute to the best of the thinking that is currently going on in a wide diversity of fields against the background of an intensely scientific age.

High honor belongs to the first Trustees, to President Morton, and to the dis-

tinguished members of his first faculty for launching this enterprise along lines that now prove so appropriate to the current needs of a period seventy-five years later, when everything other than their sound fundamentals of educational policy has changed beyond their imagining.

How then do we propose to carry on the Stevens tradition during the next quarter century? In the first place, we propose to stick to the ideal of a four-year unspecialized undergraduate course in the fundamentals of all engineering, stressing mathematics, and the basic sciences; stressing also the study of man, including both his past inspiring achievements and his present great potentialities; and stressing what is already one of the best programs of physical education in the country, beginning with a dental as well as the usual physical examinations of every freshman. Above all we shall continue to stress the development in each student of the ability to express his ideas and aspirations clearly and persuasively, both in writing and orally, for this is the basis of effective leadership. We shall also hold fast to a forty year old honor system, and shall continue to encourage a wide variety of extra-curricular activities managed by the students themselves. By these means we expect to continue to train, not expert technicians

in this or that field, what men call handbook engineers, but soundly based men characterized by resourcefulness, adaptability, and a continuing power of self-education. And we expect in the future, as in the past, to find our graduates in every sort of technical pursuit, and in many other walks of life, the responsibilities of which are only remotely technical. When I was first considering the post to which the Stevens Trustees had invited me, several unbiased advisors told me that the Stevens alumni group was probably, on the whole, the ablest group of engineering alumni in the country. I like to think that that is still true — and that it will remain true through the years to come.

Training for adaptability might be a dangerous educational ideal to pursue with any but a specially selected group of able entering freshmen. Training for technical competence in a particular specialty is much safer for any school that is in duty bound to admit any applicant with a high school diploma in his pocket. In the recent past Stevens has accepted only about one-third of those whose scholastic records have been submitted to our admissions officer. We expect to continue to select our freshmen as skillfully as we know how.

As a corollary, we must do everything we can both to sharpen our own means

of appraisal of candidates for admission and to pave the way for effective self-appraisal by young men generally. We have already taken three significant steps in this direction. First, we have encouraged, and, to a considerable extent, financed the research work of Johnson O'Connor in isolating and interpreting something over a dozen statistically independent mental aptitudes. Through his various Human Engineering Laboratories, the results of this research have helped many thousands of young people to choose both their educational and then vocational careers more wisely than might otherwise have been possible. Second, our twelve annual Junior Camp sessions at Johnsonburg have materially affected the educational plans of the five or six hundred secondary school students who have attended them. Now temporarily discontinued, these Junior Camp sessions will be resumed as soon as war conditions permit. And third, for several years before the war, we entertained at a series of dinners each winter some two thousand students, parents, and teachers in an apparently much appreciated effort to clarify for them what engineering education is, who should essay it, and who should choose some other form of higher training. This work will be resumed as soon as conditions permit.

We regard it as both a duty and a privilege to do all we can to further the welfare of all Stevens men. We like to think of our alumni as a homogeneous, cohesive group, stronger as a whole than the sum of its individual parts. That is why we like to keep track of our alumni. That is why our alumni seem to like to keep track of us, and why they are rallying with such great (and ever increasing) loyalty to our support through their Alumni Fund. In particular, our interest in our alumni has, in recent years, crystallized in two concrete ways, a placement service and a graduate school.

Our placement officer does not try merely to keep a list of those seniors and alumni who, for one or another reason, apply for help in getting a new job. Such a list in too many colleges contains only a self-picked collection of misfits not interesting to a prospective employer. Instead, Stevens tries first of all to incite in every senior careful thought as to his own best future, including appraisal, not only of himself, but also of the future prospects of the industries and firms that might employ him. Which have reasonable prospect of stability in bad times? Which new industries are most likely to grow rapidly? Where would he most like to find himself twenty-five years hence? Next, Stevens

tries to guide its senior interviews with industrial personnel men along the same lines, and to see to it, not only that each senior has as many such interviews as may be good for him, but also that he scrupulously lives up to the obligations which each interview imposes on him. And finally, when positions requiring more maturity turn up, Stevens hopes to know enough about the current status of *all* its alumni to be able to recommend the most appropriate men for each such position, whether or not they have previously expressed any interest in changing jobs. An appropriate man is, of course, not only one who can do the job well, but also one for whom the new job would be a wise step forward in his professional development.

Our graduate school is our recognition of the fact that academic training for the profession of engineering is steadily going over to a graduate basis. More and more the technical profession of engineering is becoming not an art but a mathematical science. More and more those who hope to practice engineering as such will need more, both of modern science and of the humanities, than can be compressed into a four-year undergraduate training. Our broad undergraduate curriculum supplemented by specialized graduate training at night, while a man is holding down a job

in the day-time, is our way of meeting this problem. Our graduate enrolment is already nearly two-thirds as large as that in the College, and it will undoubtedly grow rapidly in the post-war years.

Finally we believe in research, both for its own sake and because of its indirect influence on the minds of students and staff alike. Stevens has always fostered research as heartily as its modest resources would permit. Our first professor of mechanical engineering, Thurston, chose as his first major task the preparation of a treatise on the materials of engineering, and promptly found himself immersed in research, one of the fruits of which was the now familiar triangular diagram for plotting the properties of ternary alloys. In recent years, in addition to the mental aptitude research already mentioned, Stevens has fostered three considerable research programs, each with its own independent staff. Perhaps the best known of these is the ship-model towing-tank program now using a third of a million dollars worth of equipment on confidential war research mostly for the navy, and employing a staff just about as large as the teaching staff of the College itself. Our present research staff in powder-metallurgy, wholly supported by industry, is equally well known in its own field. Our Rockefeller-supported research on the use

of controlled sound in theatres and in industry had already achieved some notable successes when the war came along and absorbed the whole group, considerably enlarged, in secret war work. In addition many of our professors have carried on research for industrial clients under individual contracts carrying an overhead for the benefit of the college as a whole. All this is an excellent foundation on which to build on sound lines, the recently launched Stevens Research Foundation.

This then is the Stevens program for the now-foreseeable future: — a four-year undergraduate college offering a broad basic engineering training to a carefully selected student body; a continuing interest in every member of that student body from the day he enters until, many years later, death terminates a highly useful career; provision

for specialized graduate training for all who need it; the whole educational process permeated and inspired by a spirit of research engendered and fostered by the presence on the campus of a number of strong, successful research projects well staffed by keen young men; and the whole leavened by that "unconscious tuition" which alone can breed character and high ideals in any student body, an unconscious tuition exerted by a teaching staff highly skilled, not only in its several professional fields, but in the art of living nobly and inspiringly in all of life's various phases. The strength of Stevens at the start lay in an unusually able first faculty; may its greatest strength always be in a faculty every member of which is personally an inspiration to every student who comes in contact with him.

Harvey N. Davis.

TRUSTEES AND FACULTY

At the Beginning of Each Quarter Century

1870

THE TRUSTEES

MRS. E. A. STEVENS

Wife of the Founder

REV. SAMUEL BAYARD DOD

Minister of the Presbyterian Church at Monticello, New York, and at Wilkes-Barre, Pennsylvania

WILLIAM W. SHIPPEN, ESQ.

Executor of the Estate of Edwin A. Stevens

THE FACULTY

HENRY MORTON, PH.D.

President

ALFRED M. MAYER, PH.D.

Professor of Physics

ROBERT H. THURSTON, C.E.

Professor of Mechanical Engineering
(Late of the U. S. Naval Engineers)

LIEUT. COL. H. A. HASCALL*

Professor of Mathematics

C. W. McCORD, A.M.

Professor of Mechanical Drawing

ALBERT R. LEEDS, A.M.

Professor of Chemistry

C. F. KROEH, A.M.

Professor of Languages

REV. EDWARD WALL, A.M.

Professor of Belles-Lettres

*Replaced almost immediately by *De Volson Wood, A.M., C.E.*

1895

THE TRUSTEES

ANDREW CARNEGIE	Steel Manufacturer
REV. SAMUEL BAYARD DOD	Minister of the Presbyterian Church at Monticello, New York, and at Wilkes-Barre, Pennsylvania
ALEXANDER C. HUMPHREYS, M.E.	Member of the Firm, Humphreys and Glasgow, New York and London
FRANK E. IDELL, M.E.	Consulting Engineer
HON. ALEXANDER T. MCGILL, LL.B., LL.D.	Chancellor of New Jersey
CHARLES MACDONALD, C.E.	Senior Partner, Union Bridge Company
HENRY MORTON, PH.D.	President of Stevens Institute of Technology
MRS. EDWIN A. STEVENS	Wife of the Founder
EDWIN A. STEVENS, B.A.	Son of the Founder; Engineer; Hoboken Land and Improvement Company
ALFRED R. WOLFF, M.E.	Consulting Engineer
DURAND WOODMAN, B.S., PH.D.	Analytic and Consulting Chemist

THE FACULTY

HENRY MORTON, PH.D.	President of Stevens Institute of Technology
ALFRED M. MAYER, PH.D.	Professor of Physics
DE VOLSON WOOD, A.M., C.E.	Professor of Mechanical Engineering
J. BURKITT WEBB, C.E.	Professor of Mathematics and Mechanics
CHARLES W. MCCORD, A.M., SC.D.	Professor of Mechanical Drawing
ALBERT R. LEEDS, PH.D.	Professor of Chemistry
CHARLES F. KROEH, A.M.	Professor of Languages
REV. EDWARD WALL, A.M.	Professor of Belles-Lettres
COLEMAN SELLERS, E.D.	Professor of Engineering Practice
JAMES E. DENTON, M.E.	Professor of Experimental Mechanics and Shop-work
WILLIAM E. GEYER, PH.D.	Professor of Applied Electricity
THOMAS B. STILLMAN, PH.D.	Professor of Analytical Chemistry
ADAM RIESENBERGER, M.E.	Assistant Professor of Mechanical Drawing
WILLIAM H. BRISTOL, M.E.	Assistant Professor of Mathematics
D. S. JACOBUS, M.E.	Assistant Professor of Experimental Mechanics and Shopwork
SAMUEL D. GRAYDON, M.E.	Assistant Professor of Mechanical Drawing
ROBERT M. ANDERSON, M.E.	Assistant Professor of Applied Mathematics
GEORGE L. MANNING, M.E.	Assistant Professor of Physics and Chemistry

1920

THE TRUSTEES

JOHN ASPINWALL, M.E., M.A.	President, Coldwell Lawn Mower Company
WILLIAM HENRY BRISTOL, M.E.	President, The Bristol Company
ANSON WOOD BURCHARD, M.E.	Vice-President, General Electric Company
NEWCOMB CARLTON, M.E.	President, Western Union Telegraph Company
COLONEL GEORGE HARVEY	Editor, North American Review
WILLIAM DIXIE HOXIE, M.E.	President, The Babcock & Wilcox Company
ALEXANDER CROMBIE HUMPHREYS, M.E., E.D., Sc.D., LL.D.	President, Stevens Institute of Technology; President, Buffalo Gas Company; President, Humphreys & Miller, Inc.
DAVID SCHENCK JACOBUS, M.E., E.D.	Advisory Engineer, The Babcock & Wilcox Company
WALTER KIDDE, M.E.	President, Walter Kidde & Company, Inc., En- gineers and Constructors
FRANKLIN BUTLER KIRKBRIDE, A.B.	Director and President, SKF Industries, Inc.
RICHARD VLIET LINDABURY, LL.D.	Lawyer
FREDERICK AUGUSTUS MUSCHENHEIM, M.E.	President, Hotel Astor
EDWIN AUGUSTUS STEVENS, JR., M.E.	Grandson of the Founder
NICHOLAS SNOWDEN HILL, JR., M.E.	Consulting Engineer
EDWARD WESTON, LL.D., Sc.D.	President, Weston Electrical Instrument Com- pany

THE FACULTY

FRANCIS JONES POND, PH.D.	Professor of Chemistry and Director of the Morton Memorial Laboratory of Chemistry
LESLIE HERR BACKER, M.E.	Assistant Professor of Chemistry
ALEXANDER CROMBIE HUMPHREYS, M.E., E.D., Sc.D., LL.D.	Professor of Economics of Engineering
LOUIS ALAN HAZELTINE, M.E.	Professor of Electrical Engineering
FRANK CLIFFORD STOCKWELL, A.B., S.B.	Assistant Professor of Electrical Engineering
JAMES EDGAR DENTON, M.E., E.D.	Professor Emeritus of Engineering Practice
ROBERT MARSHALL ANDERSON, B.S., M.E.	Professor of Engineering Practice
FRANK LOUIS SEVENOAK, A.M., M.D.	Professor of English and Logic
ARTHUR JAMES WESTON, A.M.	Assistant Professor of English and Logic
FRANKLIN DERONDE FURMAN, M.E.	Professor and Head of Department of Machine Design
WILLIAM REEDER HALLIDAY, M.E.	Assistant Professor of Mechanism
EDWIN ROE KNAPP, M.E.	Professor of Mechanical Drawing

SAMUEL HOFFMAN LOTT, M.E.	Assistant Professor of Mechanical Drawing
CHARLES OTTO GUNTHER, M.E.	Professor of Mathematics
LEWIS ELMER ARMSTRONG, PH.B.	Assistant Professor of Mathematics
ROBERT MARSHALL ANDERSON, B.S., M.E.	Acting Professor of Mechanical Engineering
J. HECTOR FEZANDIE, M.E., A.M.	Assistant Professor of Mechanical Engineering
LOUIS ADOLPHE MARTIN, JR., M.E., A.M.	Professor of Mechanics
RICHARD FRANCIS DEIMEL, B.S., A.M.	Assistant Professor of Mechanics
GUSTAV GEORGE FREYGANG, M.E., A.M.	Assistant Professor of Mechanics
CHARLES FREDERICK KROEH, A.M.	Professor of Modern Languages
FREDERICK WILLIAM HOCK, PH.D.	Assistant Professor of Modern Languages
PAUL JOHN SALVATORE, A.B.	Assistant Professor of Modern Languages
JOHN ALFRED DAVIS, B.S.	Director of Physical Education
PERCY HODGE, PH.D.	Professor of Physics
CLIFFORD BLONDEL LEPAGE, M.E.	Assistant Professor of Physics
ALFRED SEGUINE KINSEY	Professor of Shop Practice
FRANK EDWARD HERMANNS, S.B.	Professor of Structural Engineering

1945

THE TRUSTEES

JOHN ASPINWALL, M.E., M.A.

CARL M. BERNEGAU

ROBERT BOETTGER, M.E.

FREDERIC EDGAR CAMP, A.B.

HENRY DONALD CAMPBELL, B.A., LL.B.

CHARLES MERRILL CHAPIN, JR., A.B.

ERLE VICTOR DAVELER, B.S., MET.E.

HARVEY NATHANIEL DAVIS, PH.D., LL.D.,
Sc.D., D.Eng.

CHARLES ENGELHARD, E.D.

ARTHUR GRAHAM GLASGOW, M.E., E.D., Sc.D.

EARL LEONARD GRIFFITH, M.E.

ALBERT WAHL HAWKES, LL.B.

DAVID SCHENCK JACOBUS, M.E., E.D.

FRANKLIN BUTLER KIRKBRIDE, A.B.

ALEXANDER BARKSDALE MACBETH, M.E.,
E.D.

WILLIAM CULLEN MORRIS, M.E.

GEORGE LEROY MORRISON

CHARLES STEWART MOTT, M.E., E.D.

JOHN HENRY MULLER, M.E.

FREDERICK AUGUSTUS MUSCHENHEIM, M.E.

ROBERT COX POST, M.E., E.D.

AUGUSTE GOUBERT PRATT, M.E.

CARL ALBERT SCHLEGEL, M.E.

WILLIAM HENRY SPEER, LL.D.

ROBERT CROOKS STANLEY, M.E., E.M., E.D.,
Sc.D.

EDWIN AUGUSTUS STEVENS, JR., M.E.

WILLIS HORN TAYLOR, JR., M.E.

JOHN REYNARD TODD, A.B., A.M., LL.D.

JOHN C. TRAPHAGEN, LL.D.

STEPHEN FRANCIS VOORHEES, C.E., E.D.,
D.F.A.

HERBERT APPLETON WAGNER, M.E., E.D.

CHARLES EDWARD WILSON, E.D.

President, Coldwell Lawn Mower Company

President, Keuffel & Esser Company

Secretary and Director, United Piece Dye Works

Dean, Stevens Institute of Technology

President, The Chase National Bank

Vice-President, The Saint Joseph Lead Company

Vice-President, American Zinc Lead and Smelting Company

President, Stevens Institute of Technology

President, Baker & Co., Inc.

Chairman, Humphreys and Glasgow, Ltd.

Assistant Vice-President, Consolidated Edison Company of New York

United States Senator from New Jersey

Formerly Advisory Engineer, The Babcock & Wilcox Company

Trustee

Formerly President, Southern California Edison Company

Formerly Vice-President, Consolidated Edison Company of New York

President, General Baking Company

Director, General Motors Corporation

Vice-President, The Equitable Life Assurance Society

President, Hotel Astor

President, Post & McCord, Inc.

President, The Babcock & Wilcox Company

United Engineers and Constructors, Inc.

General Attorney and Director, Public Service Corporation of New Jersey

Chairman and President, The International Nickel Company of Canada, Limited

Marine Engineer, War Shipping Administration

Member of the firm of Pennie, Davis, Marvin and Edmonds

President, Eastern Offices, Inc.

President, Bank of New York

Architect, Voorhees, Walker, Foley & Smith

Formerly President, Consolidated Gas, Electric Light and Power Company of Baltimore

President, General Electric Company

1945

THE FACULTY

HARVEY NATHANIEL DAVIS, PH.D., SC.D., LL.D. D.ENG.	President
PERCY HODGE, A.B., B.S., PH.D.	Professor Emeritus of Physics
ARTHUR KORN, PH.D., DR.ING.	Professor Emeritus of Electrical Engineering
WILLIAM DUANE ENNIS, M.E., E.D.	Professor Emeritus of Economics of Engineering
CHARLES OTTO GUNTHER, M.E.	Professor of Mathematics and Ordnance Engineering
WALTER VAN DYKE BINGHAM, B.A., M.A., PH.D., SC.D.	Professor of Psychology
RICHARD FRANCIS DEIMEL, B.S., M.A.	Professor of Mechanical Engineering
WILLIAM REEDER HALLIDAY, M.E.	Professor of Machine Design
GEORGE MARTIN WEIMAR, A.B., A.M., PH.D.	Associate Professor of English and History; Secretary of the Faculty
ARTHUR JAMES WESTON, B.A., A.M.	Professor of English
WALDEMAR MATTHAEUS STEMPER, A.B., M.A.	Assistant Professor of Physics
FRANK CLIFFORD STOCKWELL, A.B., S.B.	Anson Wood Burchard Professor of Electrical Engineering
WALTER SQUIRE, A.B., A.M.	Associate Professor of Music
JOHN ALFRED DAVIS, B.S.	Director of Physical Education
LESLIE HERR BACKER, M.E.	Professor of Chemistry
GEORGE WINCHESTER BARNWELL, B.S., M.A.	Professor of Production Practice
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NICHOL HARDING MEMORY, M.E.	Assistant to the President; Director of Admis- sions
EUGENE PAUL POLUSHKIN, MET. ENG.	Associate Professor of Metallurgy
ROY CLARKE HANAWAY, A.B., M.A.	Assistant in Economics of Engineering
GREGORY JAMIESON COMSTOCK, PH.B.	Professor of Powder Metallurgy
EUGENE HECTOR FEZANDIE, B.S., M.E	Associate Professor of Mechanical Engineering
JAMES CREESE, LITT.B., M.A., LL.D.	Vice-President and Treasurer

JOHN CHARLES WEGLE, M.E.	Professor of Engineering Drawing and Descriptive Geometry
PAUL ALLEN, JR., A.B., M.A., PH.D.	Associate Professor of Chemistry
KENNETH SEYMOUR MOORHEAD DAVIDSON, B.S. in M.E., Sc.D.	Professor of Mechanical Engineering; Director of the Experimental Towing Tank Laboratory
JOHN PRESTLEY FIFE, B.A., M.A.	Associate Professor of English
DONALD DELACY FOSTER, B.Sc., PH.D.	Assistant Professor of Mathematics
JOHN BALLARD HAWKES, A.B., M.E., M.A., PH.D.	Associate Professor of Physics
JOHN CARNEGIE SIM	Associate Director of Physical Education
FRANCES HURD CLARK, A.B., M.S. Sc.D.	Assistant Professor of Powder Metallurgy
HAROLD BURRIS-MEYER, B.S., M.A.	Associate Professor of English
ALFRED BORNEMANN, M.E., DR. ING.	Associate Professor of Engineering Chemistry
FREDERICK JOSEPH GAUDET, A.A., ED.M., PH.D.	Associate Professor of Psychology
NEWELL ORMSBEE MASON, A.B., A.M.	Associate Professor of History
WILLIAM LAWRENCE SULLIVAN, B.S., M.S.	Associate Professor of Electrical Engineering; Director of the Graduate School
FREDERIC EDGAR CAMP, A.B.	Dean
FRANK J. MISAR, B.P.E.	Assistant Director of Physical Education
KENNETH JAMES MOSER, M.E., M.S.	Assistant Professor of Mechanical Engineering
CARL NEITZERT, B.S., M.A., Sc.D.	Assistant Professor of Electrical Engineering
MARK RANDOLPH REEKS, E.E., M.S., M.A.	Assistant Professor of Mathematics
EDWIN GEORGE SCHNEIDER, B.S., PH.D.	Assistant Professor of Physics
RICHARD DALE HUMPHREY, B.A., A.M., PH.D.	Assistant Professor of English and History
ARTHUR LESSER, JR., M.E., M.B.A., PH.D.	Assistant Professor of Industrial Management
RALPH OLIVER VUILLEUMIER, M.E., M.S.	Assistant Professor of Mechanical Engineering; Camp Executive
JEROME PERRY MORGAN, B.S., M.S., PH.D.	Assistant Professor of Chemistry
FRANKLIN FURST, A.B., M.S.	Assistant Professor of Physics
PAUL ANTHONY WOLFF, M.E., M.S.	Assistant Professor of Physics
JEROME FLORIAN KUZMICK, B.CHE.	Assistant Professor of Powder Metallurgy

KENNETH S. M. DAVIDSON, B.S. in M.E., Sc.D.	Director of the Experimental Towing Tank Laboratory
GREGORY JAMIESON COMSTOCK, PH.B.	Director of the Powder Metallurgy Laboratory
ALFRED BORNEMANN, M.E., DR. ING.	Director of the Peirce Metallographic Laboratory
HAROLD BURRIS-MEYER, B.S., A.M.	Director of the Stevens Theatre
WILLIAM LAYNE WOOLF, B.S.	Director of the Sound Research Laboratory
JOHNSON O'CONNOR, A.B., A.M.	Director of the Department of Psychological Studies (Human Engineering Laboratory)
ENID MAY HAWKINS	Librarian
WILLIAM SMITH, M.E.	Superintendent of Buildings and Grounds
WALTER A. SYKES	Controller
ROBERT E. BOYLES, LIEUTENANT, U.S.N.R., B.S., A.M., PH.D.	Commanding Officer
PHILIP LEO KELLY, LIEUTENANT, U.S.N.R., PH.B., B.ED., M.ED.	Executive Officer (From August, 1944)
PERCY JOSEPH TUTHILL, LIEUTENANT (M.C.), U.S.N.R., B.S., M.D.	Medical Officer
EDGAR L. BAILEY, LIEUTENANT (J.G.), U.S.N.R., A.B.	Physical Training Officer

THE ALUMNI ASSOCIATION



THE OLD STONE MILL

THE ALUMNI ASSOCIATION

THE ALUMNI ASSOCIATION of Stevens Institute of Technology was organized on July 1st, 1876. There were twenty-five members. There are now over four thousand members. Its purpose, then as now, was "to cultivate such social relations as shall tend to foster among its members a sentiment of regard for one another and of attachment to their Alma Mater, and to promote in every way the interests of the Institute."

The original organization, the Constitution adopted in 1877, and the amended Constitution adopted in 1893, had all provided for membership in the Association to be established on a dues-paying basis. However, at the Annual Meeting of the Alumni Association on June 7th, 1930, a most forward-looking amendment was proposed and adopted to make "all recipients of degrees in course" Active Members with the right to vote and hold office. Thus it is that the Stevens Alumni Association now embraces all living Stevens

graduates. Many other amendments clarifying and broadening the scope of the Constitution and setting up the present Alumni Fund were proposed and adopted at this historic meeting of 1930.

Without doubt the outstanding characteristic of the Stevens Alumni Association has always been the close and constructive coordination between the Association and the College. This cordial relationship is shown by many significant instances.

The original constitution provided for four standing committees, the specific purpose of each being to fulfill definite needs of the College. These committees were as follows: Collections — "whose duty it shall be to seek methods of adding to the collection of apparatus and material" at the Institute; Physical Development — to promote the physical development of the students; Library — for making additions to the Institute library; and Mechanical Engineering — "to report at each annual

meeting upon important steps in mechanical engineering made during the previous year and to suggest . . . ”

Down through the years the office of Treasurer has been filled without break by

a member of the faculty. These treasurers have been six in number. The Association owes a debt of gratitude for its stability and success to the conscientious and unselfish endeavours of these treasury officers.

UPPER CAMPUS



Less than ten years after the start of the Association it petitioned the Board of Trustees for representation on the Board. This was quickly granted, largely through the warm interest manifested by President Morton in all alumni affairs. The desirability of the step was quickly confirmed by increasing the representation only four years later from one to three Alumni Representatives on the Board of Trustees.

The Association and Presidents of Stevens

In 1892 the alumni presented a portrait of President Morton to the Institute as evidence of their affection for him and their respect for his administration. In 1902, following his unexpected death, they promptly authorized the completion of the 25th Anniversary Volume he had planned, and dedicated it to his memory as the Morton Memorial Volume. It was a fitting tribute to one of America's greatest and most sincere educational leaders. Much credit for the final completion of this Morton Memorial Volume in 1905 was due to the conscientious efforts of Prof. Franklin De Ronde Furman, its Editor.

The Alumni Association took prominent part in the drafting of Dr. Humphreys, one of their own number, as Second President of Stevens Institute of Tech-

nology. In 1913 the alumni dedicated the Annual Banquet to President Humphreys in honor of his first ten years of brilliant service as President of his own Alma Mater.

When in the course of time it again became necessary to find a new President for Stevens, one of the first moves of the Board of Trustees was to circularize the alumni for suggestions. During the long search which finally culminated in the selection of Harvey N. Davis as the third President of Stevens, the alumni were kept fully advised. Following the ultimate selection, the Board of Trustees invited all the alumni to a dinner at the Astor to greet Dr. Davis. Thus, from its very beginning, the relationship between Dr. Davis and the Stevens alumni has been close and most cordial. Many of his most intimate associations with graduates and undergraduates alike have since sprung into being at the Stevens Engineering Camp, created under his supervision and one of his best-loved projects. In 1943 a famous artist painted a portrait of Dr. Davis, incident to his service as a director of research for the War Production Board. Almost before the paint was dry, the alumni exhibited their devotion to President Davis by purchasing this portrait and presenting it to him for the College at the Annual Dinner held in January, 1944.

Association Activities

In 1887 an employment service for alumni was created, to be administered jointly by the Association and the College. Many prominent alumni aided the bureau in getting off to a good start by calling upon its services to fill vacancies in their own organizations. In later years the administration of this bureau inclined more to the Association where it seemed logically to belong. Its scope has gradually expanded until it now is a fountainhead of trained engineers for all industries. The bureau publishes each year a descriptive booklet of the senior class, setting forth the individual and collective qualifications of each graduate, together with a photograph. This booklet is widely distributed to all desired prospective employers. The response has been most effective, and highly gratifying even in bad times.

The following partial list of committees appointed by the Executive Committee over the years to supplement the original constitutional committees, long since superseded, point out the wide scope of Association affairs and their close relationship with the College:

Publicity, Athletics, Auditing, Increase in Membership, Banquet, Southern Alumni Letter, Music, Dramatics, Engineering Society, Link, Stute, Prep Night, Student Ac-

tivities, Resolutions, Nominating, Military and Naval affairs, Appropriations, Finances and Securities, Castle Headquarters, Luncheon, Employment Bureau, Theatre Party, Military Preparedness, Undergraduate Music and Dramatics, Stevens Clubs, Prep School, Alumni Day, Alumni Awards, Finance, *Indicator*, Special Alumni Activities, Alumni Dinner, Alma Mater Song, and Athletic Investigations.

This lengthy list does not include Fund Committees. These have been many and emphasize the fact that they were all inspired by the actual requirements of the College, by the desire of the alumni to assist in the operation and development of their Alma Mater, by frequent impulses to honor and pay tribute to the Faculty or to fellow alumni, and above all by the astute realization by all members of the Association that no organization can long endure on a basis solely of fellowship and good times, but must always receive its vitalizing impulses from worthy and needed endeavors.

The Stevens *Indicator*, the Association publication, has constantly kept the Alumni informed of the progress of the College as well as serving as an intimate record of the growth and activities of the Association. The class news columns constitute a continuous living recital of the participa-

tion of Stevens graduates in the social and business worlds. The *Indicator* was started as an undergraduate publication in 1884. It was published monthly during the college year until the end of 1886, when its management and financing were taken over by the Association. The editorial board consisted of two alumni and four undergraduate members, but its policy has been shaped almost entirely by the alumni editors. For some years, the management of the *Indicator* was in the hands of a single alumni editor, under the general direction of the Alumni Association. Beginning with

January, 1887, the *Indicator* was issued quarterly. Then, during another period, there were ten issues a year. Since 1933 it has been found desirable to reduce publication to six issues per year, and to devote the savings thus effected to a more vivid portrayal of events and personalities by a liberal use of photographs.

One of the most recent and vivid expressions of Association and Administration cooperation were the Prep School Dinners for secondary school seniors, sponsored by an alumni committee under the chairmanship of John H. Muller.

THE CASTLE



Social Activities

All human beings, and particularly enthusiastic Stevens alumni, must relax from time to time through purely social activities. The Association has provided amply for such events, several being on a fairly large scale.

In 1888 the first Midwinter Meeting was held; it was perpetuated largely as a social function, most business transactions occurring at the June meeting.

The grand custom of the Stevens Annual Banquet originated in 1901. The first Annual Banquet was held that year at the Hotel Manhattan. Today it is hard to imagine that these great occasions have not always existed. The locale of the banquets was soon shifted to the Hotel Astor, which down through the years has been the setting for most of the more brilliant occasions in Stevens history. To this day, in good years and bad, these banquets have marked the summit of alumni enthusiasm for a memorable good time, a sumptuous feast, and demonstrations of affection for one another and their Alma Mater.

Alumni Day has now become such a prominent and important feature of our Commencement season that the present college generation will find it hard to realize that it is a comparatively modern institution. It had its inception at the decennial

reunion of the Class of '97, which took place in the Morton Memorial Laboratory in June, 1907. It was decided that the class should erect a gate at the north entrance of Castle Point Field. In planning for the dedication of this gate and of the field itself, the idea of an annual celebration by the alumni, such as we are now so happily accustomed to, was conceived and taken up with the executive committee of the Alumni Association. Its success exceeded all expectations, and made certain its repetition in future years. While Alumni Day celebrations have sometimes been on a modest scale as a result of war or depression, Alumni Day has been enjoyed as the perfect informal occasion on which the alumni, their families, and their friends come back to Stevens.

In 1912, the Stevens Theater Party was inaugurated as an annual affair. The entire house for one of the best shows in town was contracted for by the Association. The body of the house was reserved for the alumni and their friends, and the gallery for the undergraduates, thus providing the setting for a tumultuous Stevens night aided and abetted by the actors as the evening progressed. These parties always terminated with a supper dance at the Hotel Astor.

Monthly Alumni Luncheons in down-

town New York were started by the Association in 1913. They were held at appropriate places such as the Whitehall Club and the Lawyers Club. These luncheons have recently been successfully revived under the joint sponsorship of the Alumni Association and the Stevens Metropolitan Club.

Entirely separate from the Alumni Association, the Stevens Alumni Clubs have been organized from time to time by groups of Stevens alumni in various cities in this country and abroad; the oldest of these Stevens Alumni Clubs is the one in London, at one time called the Stevens Club of Europe.

The roll of these clubs now includes the Baltimore Stevens Club, Philadelphia Stevens Club, Western Stevens Club (Chicago), Stevens Club of Pittsburgh, Stevens Club of Boston, Stevens Club of Michigan

(Dearborn), North Jersey Stevens Club, Stevens Club of Northern California, Stevens Alumni Club of Southern California, Stevens Club of Ohio, Stevens Club of the Southwest, Jersey Shore Stevens Club, Rhode Island Stevens Club, Varsity S Club, Bridgeport Stevens Club, Stevens Club of Washington, Stevens Metropolitan Club (New York).

From the beginning the organized alumni of Stevens have filled an indispensable role in their continual community effort toward a greater Stevens. The three-quarter-century mark in the development of a great college finds its alumni united, vitalized, and tireless in their devotion to the college that gave them stature. *Ad Astra Per Aspera, To the Stars Through Striving*, truly constitutes the guiding spirit of the Alumni Association of Stevens Institute of Technology.



THE ALUMNI MEDAL

PRESIDENTS OF THE STEVENS ALUMNI ASSOCIATION

1876-77	William Hewitt '74	10-11	Walter Kidde '97
77-78	Henry W. Post '74	11-12	George Dinkel '88
78-79	W. E. Geyer '77	12-13	E. H. Peabody '90
79-80	James E. Denton '75	13-14	J. H. Cuntz '87
80-81	Alfred P. Trautwein '76	14-15	J. A. Dixon '91
81-82	Alfred R. Wolff '76	15-16	W. E. S. Strong '92
82-83	Adolph Sorge '75	16-17	F. A. Muschenheim '91
83-84	Roland S. Kursheedt '80	17-18	F. E. Law '92
84-85	William Kent '76	18-19	N. S. Hill, Jr. '92
85-86	Alexander C. Humphreys '81	19-20	Robert Boettger '98
86-87	George M. Bond '80	20-21	E. E. Hinkle '90
87-88	Alfred R. Wolff '76	21-22	H. E. Griswold '93
88-89	Lewis H. Nash '77	22-23	B. F. Hart, Jr. '87
89-90	Gustavus C. Henning '76	23-24	James E. Sague '83
90-91	Alfred P. Trautwein '76	24-25	John H. Peper '09
91-92	Edward B. Wall '76	25-26	Richard A. Wolff '14
92-93	Cornelius Field '86	26-27	Henry T. Gerdes '02
93-94	Henry Van Atta '81	27-28	Roger C. Aldrich '99
94-95	William Hewitt '74	28-29	William J. Boucher '96
95-96	Henry de B. Parsons '84	29-30	H. V. W. Scott '18
96-97	Edward P. Roberts '77	30-31	T. H. Kirkman '08
97-98	John W. Lieb, Jr. '80	31-32	David C. Johnson '06
98-99	Robert M. Dixon '81	32-33	Murray E. Whiteleaf '00
99-00	Hosea Webster '82	33-34	W. E. Paulson '04
1900-01	W. L. Lyall '84	34-35	J. G. Bainbridge '11
01-02	Carter N. Page, Jr. '87	35-36	F. A. Lydecker '07
02-03	William S. Ackerman '91	36-37	F. M. Gibson '01
03-04	William C. Post '86	37-38	W. C. Morris '96
04-05	R. M. Anderson '87	38-39	J. A. Malone '12
05-06	W. H. Bristol '84	39-40	W. H. Taylor, Jr. '16
06-07	A. G. Glasgow '85	40-41	O. C. Roesen '12
07-08	H. Torrance '90	41-42	E. L. Griffith '23
08-09	H. S. Morton '97	42-43	John H. Muller '21
09-10	H. M. Brinckerhoff '90	43-44	Carl A. Schlegel '10

44-45 Kimber DeHart '26

THE STEVENS FUND

THE STEVENS FUND, its purposes and operation, than to quote directly from the Alumni Association Constitution, Article XVI, Section 2.

"The purpose of the Stevens Alumni Fund is to provide an annual income to the Board of Trustees of Stevens Institute of Technology for the purpose of helping them meet such expenditures as are not provided for by the permanent endowments of the College, to provide annually the moneys necessary to operate the Alumni Association of Stevens Institute of Technology and to assist such undergraduate activities as the Executive Committee may select."

The Stevens Fund has now completed sixteen years of operation, in which time it has raised a total of approximately \$300,000. During this period the total annual subscription has increased from just under \$10,000 per year to over \$43,000 in 1944. Interest and enthusiasm in the work of the Fund has spread among the

alumni in an extremely heartening manner. The percentage of alumni participation in the Stevens Fund is among the first three of all comparable college funds in this country.

When the Stevens Fund was established it took the place of all previous money raising activities on the part of the alumni. It assumed not only the responsibility for raising such funds as were necessary to operate the Alumni Association, but in a larger and more important sense assumed the responsibility for providing a regular annual income to the Trustees of Stevens Institute of Technology to help meet such expenditures as are not provided for by permanent endowments. In recent years, subscriptions to the Fund have made it possible to make substantial sums available to the Trustees and thereby render important and dependable assistance.

Stevens has never had a really adequate income from endowment, and an annual Fund of the present or even greater pro-

portions has come to constitute a living endowment even more dependable and inspiring than a comparable invested endowment. The need for such annual support has been great, and will undoubtedly continue to be for some years to come. As war came, Stevens had to equip itself at considerable expense to be in a position to offer the training which the United States Navy wanted to give its V-12 trainees. For a while substantial enrollment was produced, but recent curtailments and a shortage of civilian students bring uncertainties that will last even into the post-war period.

Engineering colleges need substantial funds to carry on their necessarily pioneering work. It cannot be expected that the cost of educating engineers will ever be completely covered by tuitions received.

The Stevens Fund has therefore in

recent years broadened its base in order to include, in addition to alumni, all corporations and friends who have an interest in the perpetuation and improvement of engineering education. It is gratifying to find that many believe this to be logical and are prepared to assist, as evidenced by the fact that many large corporations are included among the subscribers.

Stevens today is a stronger college than it was when the Fund started, stronger in its Faculty, stronger in its academic curriculum, and stronger in the qualifications of its graduates and students. Its plant and physical condition, however, have naturally suffered during the late depression and even in recent wartime years. The Stevens Fund will be of incomparable assistance in rebuilding the college in its physical aspects as soon as such work becomes possible.



A PROPOSED PLAN FOR THE STEVENS CAMPUS

BENEFACTORS OF STEVENS



AN ENTRANCE TO JACOBUS HALL

BENEFACATORS

Among the Benefactors of Stevens are these who have made substantial contributions to permanent and to special funds by gifts and bequests to the Trustees for their corporate purposes. They are listed here in an order naming first those whose gifts to the College were greatest.

Edwin Augustus Stevens, Founder

In 1870, for the original endowment, lands, and building.

Andrew Carnegie, Trustee

Between 1899 and 1920, for the Carnegie Laboratory of Mechanical Engineering, for special purposes and for endowment; and since 1920 through grants from *Carnegie Corporation* for endowment, for current purposes, and for library acquisitions.

Florence Osgood Rand Lang

Between 1911 and 1941, for current and corporate purposes, for endowment, and for the Lang Tract of the Stevens Engineering Camp.

The General Education Board and the Rockefeller Foundation

Between 1915 and 1943, for endowment, for current purposes, and for research.

Countess Allene de Kotzebue

In 1929, for the Anson Wood Burchard ('85) Professorship and Department of Electrical Engineering.

William Slocum Barstow, Trustee

and The William and Francoise Barstow Foundation

In 1932, for the John W. Lieb ('80) Memorial Library Rooms; in 1937, for Jacobus Hall in tribute to David S. Jacobus, '84; for maintenance, for current purposes, for scholarships, and for the care of the Edison Tower.

Edgar Palmer, *Trustee*

Between 1934 and 1941, for current purposes and in 1937, for Palmer Hall.

The Charles Hayden Foundation

Between 1938 and 1942, for scholarships and loans to students; and in 1945, for corporate purposes.

Henry Morton, *President*

Between 1881 and 1901, for current purposes, for shops, and for funds expended on the Morton Memorial Laboratory of Chemistry.

Edward S. Harkness

In 1915 and 1924, for endowment and for special purposes.

George Grant Mason

Between 1910 and 1918, for campus lands, for endowment and for special purposes.

William Hall Walker, *Trustee*

In 1915, for the William Hall Walker Gymnasium (to be substantially increased under the terms of his will and that of Gertrude Walker).

George Eastman

In 1915 and 1924, for endowment and for special purposes.

Charles Engelhard, *Trustee*

Since 1937, for scholarships and for faculty salaries, for the Stevens Camp, and for research.

Edgar B. Bacon

Between 1928 and 1935, for scholarships and for corporate purposes.

Arthur Graham Glasgow, '85, *Trustee*

In 1928, toward endowment of the Alexander Crombie Humphreys ('81) Professorship of Economics of Engineering; for current purposes and for the Glasgow Prize in Public Speaking.

William Dixie Hoxie, '89, *Trustee*

In 1919, for scholarships; in 1925, for Hoxie House, the President's residence.

Frank M. Leavitt, '75

In 1940, for the Stevens Engineering Camp and the Mess Hall there.

Samuel Insull

In 1932, the Leonardo da Vinci Collection from the estate of John W. Lieb ('80).

Carl M. Bernegau, *Trustee*

In 1939, for Bernegau House; and since 1943, for research.

John Aspinwall, '81, *Trustee*

Since 1915, for scholarships, and for current and special purposes.

Robert Crooks Stanley, '99, *Trustee*

Since 1915, for the Stevens Engineering Camp, for current purposes and for research.

Research Corporation of New York

Since 1937, for research projects.

Mrs. Charles Merrill Chapin and C. Merrill Chapin, Jr., *Trustee*

Since 1938, for current purposes.

George Gibbs, '82, *Trustee*

Until 1940, for current and corporate purposes.

Robert Boettger, '98, *Trustee*

In 1924, for a scholarship in memory of Henry W. Boettger, III; and for current and corporate purposes.

William Henry Peirce, '84

In 1940, for the Peirce Metals Laboratory; and for current purposes.

Alexander Crombie Humphreys, '81, *President*

Between 1902 and 1928, for scholarships in memory of Harold Humphreys, '99, and Crombie Humphreys.

Frederic Edgar Camp, *Trustee and Dean*

Since 1938, for research, for scholarships, and for current purposes.

Edward C. Weston, *Trustee*

Between 1929 and 1932, for extension of plant and for current purposes.

Louis Alan Hazeltine, '06, *Professor*

In 1928, for special purposes; for research, and for apparatus.

Anonymous

Since 1935, for instruction in music and music appreciation.

Charles Stewart Mott, '97, *Trustee*

Since 1938, for current and corporate purposes.

William H. Bristol, '84, *Professor*

In 1931, for the Bristol Building at Camp Stevens.

Frank W. Lindsay

In 1940, for loans to students.

Anonymous

In 1930, for research on smoke abatement.

Henry D. Reed, '92

In 1943, for corporate purposes.

Fred A. Muschenheim, '91, *Trustee*

For scholarships; for current and special purposes.

Walter Kidde, '97, *Trustee*

To 1942, for current, and corporate purposes and for Camp Stevens.

Eugene E. Hinkle, '90, *Trustee*

In 1919, for scholarships; for current purposes.

Richard V. Lindabury, *Trustee*

In 1915 and 1924, for current and corporate purposes.

Mrs. Henry R. Rea

In 1923, for a scholarship in memory of Henry R. Rea, '84.

Mrs. Frederick W. Taylor

In 1933, a collection of original papers and books of reference on the work of Frederick W. Taylor, '83.

Jacob Vreeland

In 1891, to establish the Vreeland Loan Fund.

Mrs. Robert L. Stevens

Since 1915, for campus extension and improvement and for current purposes.

William H. Childs

In 1915 and 1923, for corporate purposes.

Mrs. Herbert S. Palmer

In 1919, for a scholarship in memory of John Osborne Palmer, '19.

Rhoda A. and Margaret Wiles

In 1926, for a scholarship in memory of Edwin L. Wiles, '76.

Nicholas F. Brady

In 1915 and in 1924, for corporate purposes.

Newcomb Carlton, '90, *Trustee*

In 1929, for architectural studies; and later for current purposes.

Walter H. Freygang, '12

Since 1924, for current purposes.

Henry J. Gaisman

From 1931 to 1933, to provide for instruction in the economics of inventions; and for research.

David Clayton Johnson, '06, *Trustee*

Until 1942, for current and corporate purposes.

Alexander B. Macbeth, '97, *Trustee*

Since 1922, for current and corporate purposes.

Henry T. Gerdes, '02, *Trustee*

For scholarships, for campus improvement, and for current purposes.

American Railway Master Mechanics Association

In 1891, for scholarships.

Lucretia D. Chandler

In 1918, for a scholarship in memory of Howard Marsh Chandler, '09.

Henry Pomeroy Davison, *Trustee*

In 1915, for current and corporate purposes.

T. Coleman Du Pont

In 1915 and 1924, for corporate purposes.

Harvey Nathaniel Davis, *President*

For an Alaska Collection in the Stevens Library; and for current purposes.

John Cawley

In 1919, for a scholarship in memory of Isabella Grant Cawley.

Admiral George Wallace Melville

In 1914, for a fund for the purchase of engineering equipment.

The Family of William R. Beal

In 1913, for a scholarship in memory of William R. Beal.

Arthur Curtis James

In 1915, for corporate purposes.

Henry Lang

Between 1929 and 1935, for current purposes.

Henry E. McGowan, '94

In 1932, for Camp Stevens.

Franklin Murphy

In 1915, for corporate purposes.

John J. Riker

In 1924, for corporate purposes.

Jacob H. Schiff

In 1915, for corporate purposes.

Walter Scott

In 1920, for the St. Andrews Scholarship.

E. R. Stettinius

In 1923, for corporate purposes.

Willis Horr Taylor, '16, *Trustee*

In 1924, for the Radio Scholarship.

Caroline Bayard Stevens WittPenn

Between 1929 and 1932, for current purposes.

Leon Greenebaum, '85

In 1936, for scholarships.

New Jersey Federation of Women's Clubs

In 1920, for scholarships benefitting veterans of World War I.

Harry de Barkeley Parsons, '84

In 1935, for corporate purposes.

Lieutenant Colonel George L. Wall, '93

In 1930, for a playing field at Camp Stevens.

William E. Geyer, *Professor*

In 1930, for a playing field at Camp Stevens.

Nora D. Woodman

In 1936, for a faculty apartment as a memorial to Durand Woodman, '80.

William J. Boucher, '96

In 1933, for a cabin at Camp Stevens.

Industrial Corporations

from time to time, and especially in 1915 and in 1924, have made grants to the College to aid in the training of engineers for industrial positions, to supplement the equipment of laboratories, and to provide facilities for research. Among these have been Aluminum Company of America, American Gas and Electric Company, American Platinum Works, American Power and Light Company, American Radiator Company, American Telephone and Telegraph Company, Babcock & Wilcox Company, Baker & Company, Carborundum Company, Curtiss-Wright Corporation, Joseph Dixon Crucible Company, Ekstrand and Tholand, Electric Storage Battery Company, Fellows Gear Shaper Company, General Aniline & Film Company, General Baking Company, General Electric Company, Guggenheim and Sons, Hanovia Chemical and Manufacturing Company, Hazeltine Research Corporation, Hoboken Land & Improvement Company, International Nickel Company, Johns-Manville Company, Jones & Lamson Machine Company, Keuffel & Esser Company, Walter Kidde & Company, Midvale Steel Company, National Lead Company, New Jersey Zinc Company, New York Telephone Company, North American Company, Ohio Elevator Company, Public Service Corporation of New Jersey, Singer Manufacturing Company, SKF Industries, Stone and Webster, Todd Shipyards Corporation, United States Steel Corporation, Western Electric Company, Westinghouse Electric & Manufacturing Company, and Worthington Pump Company.

The Alumni of Stevens

whose individual subscriptions, class gifts, and Alumni Association appropriations for all purposes of the College, since its incorporation, particularly in the campaigns of 1915 and 1924 and through the annual Stevens Funds since 1929, have attained such a total as to merit for the Alumni a first place among the Benefactors of Stevens.

THE EXECUTIVE COMMITTEE OF THE ALUMNI ASSOCIATION

Kimber DeHart '26, *President*

R. Morton Adams '21, *Vice-President*
Chairman, Finance Committee

Fred A. Weisenbach '10, *Vice-President*

Gustav G. Freygang '09, *Treasurer*

Willis H. Taylor, Jr. '16, *Past President*
Chairman, Alumni Awards Committee
Trustee, Stevens Institute of Technology

Oscar C. Roesen '12, *Past President*

Earl L. Griffith '23, *Past President*
Trustee, Stevens Institute of Technology

John H. Muller '21, *Past President*
Chairman, Alumni Fund Council
Trustee, Stevens Institute of Technology

Carl A. Schlegel '10, *Past President*
Chairman, 75th Anniversary Volume
Trustee, Stevens Institute of Technology

Charles F. Beckwith '09
Chairman, 75th Anniversary Alumni Dinner

Edward J. Sullivan '18

Walter Steinmann '21

Alvin M. Stock '22

Clement M. Bonnell, Jr. '19

Austin Kirkbride '22

Warren E. Atkins '21

Herman K. Intemann '30

Alden B. Gorham '23

John F. Kidde '28
Chairman, Publicity Committee

James T. Costigan '33

Richard F. Dede '36
Chairman, Stevens Clubs Committee



